



United States
Department of
Agriculture

Forest
Service

Southwestern
Region

MB-R3-01-5

April 2013



Final Environmental Impact Statement for the Rim Lakes Forest Restoration Project

Apache-Sitgreaves National Forests, Coconino County, Arizona



Cover Photos: Fulton Point now and in 1909. Fulton Point is within the Rim Lakes Forest Restoration Project area.

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Printed on recycled paper – April 2013

Final Environmental Impact Statement for the Rim Lakes Forest Restoration Project

Apache-Sitgreaves National Forests Coconino County, Arizona

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Abstract: This environmental impact statement discloses the effects of a proposal to treat vegetation in a 33,500-acre project area. The proposed action (alternative B) would selectively cut trees on approximately 23,615 acres and then broadcast burn on those acres. On approximately 9,340 acres, broadcast burning would occur without mechanical treatment. The proposed action includes an amendment to the “Apache-Sitgreaves National Forests Land and Resource Management Plan” (forest plan). Alternative C is the other action alternative considered in detail. It would implement the same proposal, except limit mechanical treatment to trees less than 16 inches in diameter, moving many treated stands toward even-aged conditions. Alternative C also proposes an amendment to the forest plan in order to allow for this even-aged condition. Alternative B is the preferred alternative.

A comment period for the draft environmental impact statement occurred in Fall 2012. According to 40 CFR 1503.4, an agency preparing a final environmental impact statement (FEIS) shall assess and consider comments both individually and collectively, and shall respond. Upon review of the comments, there were no changes necessary to the draft environmental impact statement. Therefore, the draft statement with a new cover sheet has been filed as the final statement (40 CFR 1506.9). Also filed are Appendix D to the FEIS, a response to comments received on the DEIS, and Appendix E, which provides copies of comment letters.

Because this project is proposed under the authority of the Healthy Forest Restoration Act, it is subject to a 30-day objection period that will begin upon publication of a notice in the White Mountain Independent, following the availability of this FEIS, expected in May 2013.

Appendix D. Response to comments

Introduction

The public comment period for the Rim Lakes Forest Restoration Project (Rim Lakes Project) Draft Environmental Impact Statement (DEIS) occurred between September 28, 2012 and November 13, 2012. This appendix documents how these comments were considered.

According to 40 CFR 1503.4, an agency preparing a final environmental impact statement (FEIS) shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement. Possible responses are to: (1) Modify alternatives including the proposed action; (2) Develop and evaluate alternatives not previously given serious consideration by the agency; (3) Supplement, improve, or modify its analyses.; (4) Make factual corrections; or (5) Explain why comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

Comments were received as follows:

Commenter	Comment Numbers	Abbreviation
Hopi Tribe	2-5	HT
White Mountain Apache Tribe	6,7	WMAT
Arizona Dept. of Environmental Quality	8-11	ADEQ
Wild Earth Guardians	12-43, 171	WEG
Ecological Restoration Institute	44-54	ERI
Arizona Game and Fish Department	55-64	AGFD
Environmental Protection Agency	65-71	EPA
Center for Biological Diversity	72-170, 172	CBD
USDI Office of Environmental Compliance	174-177	OEC
Note: because of the method for recording comments, comment 1, 100 and 173 are blank.		

The comment letters received for the Rim Lakes Project were logged, with comments assigned. Each comment received a response, as noted in Section 3 of this document. Section 1 of this document provides a summary. Where themes were identified in the comments, issues were developed that received a response in addition to the detailed response. Issues are presented in Section 2 below. Detailed responses to each comment—where a response is warranted—are located in Section 3 of this document. Appendix E contains copies of actual letters, with identified comments marked.

Although comments and responses provide additional context to analysis, none required developing new alternatives, modifying existing alternatives or modifying analysis provided in the DEIS.

Section 1: Comment summary and responses

This section provides summary responses to comments. Detailed responses to individual comments can be found in Section 3.

- **Tribal consultation:** Both the White Mountain Apache Tribe and Hopi Tribe provided comments during consultation and during the DEIS comment period. According to the tribal comment letters, there should be no effect to tribal interests. Continued communication with the tribes is expected as the Rim Lakes Project is implemented.
- **Collaboration:** From the point of view of several collaborative partners, including the Ecological Restoration Institute, and Arizona Game and Fish Department, this project was a model of collaboration for other projects. From other points of view—specifically the Center for Biological Diversity—collaboration was inadequate. The detailed responses in Section 3 identify methods and means for collaboration with publics for the Rim Lakes Project. In general, collaborative efforts have been ongoing on the Rim Lakes Project with the White Mountain Stewardship’s Multi-party Monitoring Board, the Natural Resources Working Group, and the Center for Biological Diversity since 2008 (DEIS page 12).
- **EPA Rating:** Based on review of the DEIS, EPA rated the preferred alternative and the document as LO-1, Lack of responses to specific EPA concerns and recommendations.
- **Climate change:** The EPA recommended additional information in relation to climate change, such as exploring how a changed climate might alter expected outcomes of the Rim Lakes Project. Detailed responses to these comments note that forest resiliency sought by the Rim Lakes Project will make forests better able to adapt as climatic conditions change. Other comments focused on the need to consider climate change as a factor in the development of this proposal because weather, not vegetation and fuel conditions would be the driver in large fire events in the future. Detailed responses refer to a body of scientific research as well as local experience indicating that vegetation conditions continue to be drivers for large fires now and will continue to be in the future, even if drier conditions become the norm.
- **Comply with requirements for smoke to reduce effects to human health:** The EPA also noted the Rim Lakes Project relies on broadcast burning to a large degree, and so the effects of this activity to health of residences in nearby communities should be considered. The detail response to this comment describes the regulatory structure in the State of Arizona to mitigate possible health effects caused by prescribed burning. Specifically, under Arizona regulations—which Forest Service burns are subject to—a permit must be issued for every prescribed burn undertaken by a national forest. Fundamental to the action alternatives is a requirement to meet all State and Federal ambient air quality standards.
- **Other regulatory requirements:** Commenters cautioned that the Rim Lakes Project must meet requirements for the Clean Water Act, as well as other watershed and soil protection. As noted in the DEIS, the effects to watershed and soil conditions are mitigated with best management practices (BMPs) described in appendix B of the DEIS.

- **Technical clarifications to the DEIS:** Comments were provided that offer suggestions for clarifying the document, such as explaining why re-entry burning isn't planned in dry mixed conifer; clarifying use of the stand density index (SDI), and the relationship between tree size and age; and expanding on the description of treatment methods. These comments receive individual responses in Section B of this document.
- **Technical suggestions about alternatives or analysis:** Suggestions were given in the following specific areas with detailed responses provided in Section 3.
 - Avoid even-aged management;
 - Avoid diameter limits while emphasizing small tree removal/reduction;
 - Enhance meadows and riparian areas;
 - Analyze Alternative C as an un-even aged alternative;
 - Analyze cumulative effects more thoroughly;
 - Analyze how the Rim Lakes Project will address mortality of large trees;
 - Make insect/disease discussions more clear, and analyze how diversity—including insect and disease—will be allowed to play a role in the project's design;
 - Consider an alternative that would close or rest the grazing allotments within the planning area to assure effectiveness of treatments; and
 - Consider an alternative that would use only current open roads.
- **Migratory Bird Treaty Act:** The OEC commented on incomplete analysis for the Migratory Bird Treaty Act. It appears these comments were based on a number of assumptions about the Rim Lakes Project location and the nature of mitigation measures that were not accurate. A detailed response is provided in Section 3.
- **Goshawk guideline controversy:** CBD raised a question about the effectiveness of the 1992 Goshawk Guidelines. CBD asked for a detailed response to research hypothesizing that goshawk guidelines are not effective. This opposing view is mentioned in the DEIS (page 139) and described in more detail in Section 3 of this document, where reference is made to research that provides context to the viewpoint presented in the comment. As noted in detailed responses, research shows the guidelines offer the best description of goshawk habitat needs as a habitat generalist, requiring both open forests for foraging, as well as closed canopy necessary for reproduction. The 1996 Forest Plan and site-specific amendment in the Rim Lakes Project are informed and supported by these scientific findings.

Section 2: Issues and Responses

The following issues derive from comment themes that have been identified from several comments. Responses to the issues are intended to avoid repeating the same or similar answer. Detailed responses to individual comments are found in Section 3.

1. The DEIS does not adequately justify how it meets the criteria of Healthy Forest Restoration Act (HFRA), nor how it was developed using a collaborative process as required by the HFRA.

Section 102 of the HFRA describes the authorized projects. Criteria that apply to this project include federal land in a wildland-urban interface; and federal lands that are important to threatened species or habitat where such a project would provide protection to the species. The Rim Lakes Forest Restoration Project meets these criteria. In May 2004, “the Community Wildfire Protection Plan for At-Risk Communities of the Sitgreaves National Forest in Apache, Coconino, and Navajo Counties” (PR 200) was finalized. The scoping letter and attached project description (PR 285) describes the area as Fire Regime Condition Class 3, at risk communities, and the presence of Threatened and Endangered Species habitat (Mexican spotted owl). An open house was advertised in the Mogollon Connection (PR 300), White Mountain Independent (PR 303), and the Pioneer Newspaper (PR 301). The open house was held on January 26, 2008 with maps and treatment descriptions for the public (PR 307).

The Rim Lakes DEIS area is the same one described in the scoping letter. The DEIS summarized this analysis (pages 1-2) in describing the purpose and need (page. 3) and in relation to fire hazard (page 9).

2. The purpose and need does not justify the treatments proposed, especially the mechanical treatments, which are likely to be more harmful than efficient prescribed burning. A better method would be to use a quantitative risk assessment to show the trade-offs of mechanical treatments and prescribed burning, which should include the need for repeated treatments and cumulative effects of those treatments.

Both action alternatives include areas treated only with prescribed fire (about 9,300 acres). These areas were chosen to be treated with prescribed fire without mechanical treatment because there is a low risk of fire escape associated with fuel loadings, and a high probability of meeting the purpose and need for this project with fire only. These are also areas where in resource considerations were taken into account that restrict mechanical treatment.

As part of the project’s design, some areas have been identified to be mechanically treated prior to burning. These areas have been identified as having a low probability of meeting purpose and need, higher probability for fire escape, and un-intended ecological consequences if treating with prescribed fire alone. The risk of damages from prescribed fire are less controllable in these areas than the risk of damages from mechanical treatments (which are low due to BMPs found in Appendix B of the DEIS).

The project analysis relies on site -specific data, rather than analytical tools proposed in the comments (such as work by Rhodes and Baker 2008). Specific data from fire history records for the past 40 years indicate that the area averages 23 fire starts a year during the months of June and July. These two months historically include very dry, warm and windy conditions. Suppression efforts alone have kept these fires small. During these type of weather conditions fire effects are expected to be damaging to watersheds, recreational values, wildlife habitat, and

other human and ecosystem values, as can be seen by the high amount of expected passive and active crown fire (67% of the area and noted in the Fuels Report page 13 (PR 443)). This indicates a high probability of fire starts in the area, high hazard (crown fire), and therefore a high risk to the values as documented in each respective specialist

Stephens et al. 2012 (PR 509) conclude that fuel reduction objectives are accomplished with little unintended consequences. Vegetation, soils, wildlife, bark beetles and carbon sequestration exhibit subtle effects or none at all. As described in the DEIS, maintenance burning would be of low severity within timeframes that don't allow for high fuel loads to accumulate. This would mitigate effects. As stated previously, the project purpose and need is to restore forest ecosystem resilience and sustainability for the benefit of multiple resources, not just hazardous fuels reduction.

3. At the Project level, FRCC is not the appropriate measure to determine eligibility under HFRA.

The DEIS displays the current FRCC under alternative A as FRCC 3. Table 27 (pages 72-73) in the DEIS, including the graph, displays the FRCC for the current condition of the area and the percentages that would result from the proposed treatments.

As also noted in the Fuels Specialist Report (PR 443 page 9), the use of FRCC was determined to be a valid method to measure the changes between no action and the action alternatives. As defined in the 2010 FRCC guidebook V. 3.0 (PR 403), FRCC provides assessment at both the landscape and stand scales (page 2). Field sampled stand data in conjunction with field verified remotely sensed data was used to analyze FRCC at this finer scale.

4. All treatments of trees greater than 9 inches diameter are in direct conflict with the HFRA requirement to retain large trees.

HFRA does not limit tree removal to only small trees as claimed in the comments. The HFRA was passed into law to deal with Hazardous Fuel Reduction on Federal Land. It provides for the identification and prioritization of areas for hazardous fuel reduction treatments that will protect at-risk communities and essential infrastructure.

HFRA (PR 191) includes direction for old growth and large tree retention as stated below:

- Section 102 (e) (2) describes project requirements to restore the structure and composition of old growth stands: “In carrying out a covered project, the Secretary shall fully maintain, or contribute toward restoration of, the structure and composition of old growth stand according to the pre-fire suppression old growth conditions characteristic of the forest type, taking into account the contribution of the stand to landscape fire adaptation and watershed health, and retaining the large trees contributing to old growth structure.”
- Section 102. (f) (1) (A) provides for projects to “focus largely on small diameter trees, thinning, strategic fuel breaks and prescribed fire to modify fire behavior, as measured by the projected reduction of uncharacteristically severe wildfire effects for the forest type and (B) maximizes the retention of large trees as appropriate for the forest type, to the extent that the trees promote fire-resilient stands.”
- Section 102(f)(2) addresses wildfire risk by saying “nothing in subsection 102(f)(1) requiring large tree retention should be interpreted in a manner that prevents achievement of the purposes described in section 2(1) [which is “to reduce wildfire risk to communities,

municipal water supplies, and other at-risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects”]

This is confirmed in FS guidance titled “The Healthy Forests Initiative and Forests Restoration Act, Interim Field Guide,” (PR 197, page 29), which notes “[t]he HFRA also states that the large tree retention requirements of Section 102(f) must not prevent agencies from reducing wildland fire risk to communities, municipal water supplies, and at risk Federal land.” (PR 197).

Analysis provided in the DEIS uses data from the Forest and project area support findings that current conditions place the project area at risk, with removal of trees greater than 9 inches in diameter being critical to reducing that risk. See following issues that describe how the project maintains large trees and old-growth.

5. The Forest should have data to support how many larger trees exist in the project area so you can determine how this project affects old-growth.

Rim Lakes proposed action will not remove existing old growth stand structure. The proposal allows for some (very few) diseased old trees to be removed for health and safety or ecological reasons related to protection of younger age classes. Existing old growth groups of trees will be retained. In fact, treatment described in Alternative B will result in an acceleration of growth of large young trees, creating larger trees more quickly than the other alternatives and restore the structure and composition toward pre-fire suppression old growth in the project area. The primary focus of this project is to restore ecosystem resiliency by moving the forest structure and species composition toward uneven-aged, old growth forest characteristics that were found in the project area before fire suppression became a dominant management strategy.

The 2011 Forest Inventory and Analysis (FIA) data from the Apache-Sitgreaves National Forests has been reviewed and compared similar data from 1911 (PR 562). This comparison shows that an average of 6.51 more trees per acre greater than 16 inches dbh are currently found than measured in the 1911 Northern Arizona forest inventory. Although on average the tree size in stands has declined since 1911, this average reflects the increase in the number of small diameter trees per acre (e.g. increased by hundreds of trees per acre), not a substantial reduction in the number of trees larger than 16 inches diameter. The very largest trees (greater than 26 inches in diameter) were not very numerous historically, representing only one tree per every 2-4 acres in 1911. (PR 562)

Analysis of the number of trees greater than 16 inches diameter is found in the in the DEIS (pages 57-58) and Silviculture Reports (PR 449, PR 450, and PR 552 and PR 553). Trees greater than 9 inches in diameter represent the predominant size class and comprise the greater number of trees per acre. No effective treatment to achieve wildland fire objectives could be considered without treating trees of these sizes. This can still be done while retaining most large trees.

6. The Forest should consider an alternative that uses the recently developed Four Forest Restoration Initiative (4FRI) large tree retention strategy (LTRS). This would show support of a collaborative process, would meet the purpose and need for reducing fuel hazards, and would keep most large trees.

Rim Lakes began as a project in 2005 with a collaborative basis in the CWPP developed through a collaborative process (PR 200). Treatments developed for the proposed action came from a purpose and need defined in the CWPP and the Forest Plan, as well as developments in the best science available during the years between 2005 and 2011. Steps in the collaboration included

involvement in the White Mountain Stewardship Project's Multi-Party Monitoring Board and the Natural Resources Working Group, as well as efforts with the Center for Biological Diversity.

As noted in the comments that aggregated into this issue, alternative C was developed as an alternative to the proposed action. It was developed through a collaborative process and analyzed the different approach recommended by the Center for Biological Diversity at that time, which was in favor of analyzing a 16-inch diameter cap alternative.

The LTRS developed by the 4 FRI Collaborative is an effort to respond to common issues and understand forest conditions in an appropriate social context for that project. The Rim Lakes Project developed its strategies in a similar way, but because the context is different, did not come to the exact same conclusions.

Nonetheless, the 4FRI collaborative has been briefed about the Rim Lakes project, with discussions between the 4FRI collaborative and the Rim Lakes effort taken up in 2012 at the request of the Forest and the 4FRI group. In a letter from members of the 4FRI collaborative to Corbin Newman, dated July 6, 2012 (PR 516), they offered comments on Rim Lakes in response to the publication of the Notice of Intent dated March 29, 2012 (PR 480). In the summer of 2012, field trips were held providing an opportunity for the 4FRI group to see the Rim Lakes area and proposed treatments (PR 518, PR 519), as noted in the DEIS page 12.

As a result of the DEIS comments by the Center for Biological Diversity, the applicable LTRS emphasis and exception categories have been reviewed and found to be similar to actions proposed in Alternative B (see detailed responses found in Section 3). Given the similarities between Alternative B and the LTRS, no additional alternative is warranted.

In addition, these comments provide no description for how the LTRS in itself would be more effective than Alternative B or Alternative C in reducing fire hazard or promoting old growth structure.

7. An alternative that used the Large Tree Retention Strategy would not require any plan amendment.

It is also not clear from the comments how an LTRS alternative—which includes interspaces—would avoid the need for a plan amendment. A project specific amendment is necessary to achieve the purpose and need because current forest plan does not specifically describe the grass, forb, shrub interspaces that are characteristic of a resilient natural forest conditions

The plan amendment for the Rim Lakes Alternative B insures plan consistency. The plan amendment is based upon desired conditions, largely informed by historic reference conditions. These desired conditions are well-supported by the scientific literature.

8. The Large Tree Retention Strategy (LTRS) developed by the Four Forest Restoration Initiative (4FRI) should be used to avoid removing large trees.

These comments postulate removal of large trees is not needed to meet the purpose and need because research shows large trees do not contribute to fuel hazard. The comments also note that large trees must be conserved if restoration is the goal.

The purpose and need for the Rim Lakes project places high value on conserving and restoring forest structure (DEIS page 3), with emphasis on large trees in Forest Plan direction. Both action alternatives retain large trees. The DEIS indicates that Alternative B would produce more large

trees over the time frame analyzed than Alternative C. Also the large trees will be more sustainable and less susceptible to loss from threats such as insects, disease and uncharacteristically severe wildfire.

The Rim Lakes Project removes some larger trees to ensure a spatially heterogeneous canopy fuel profile. The project also focuses on restoring historically characteristic uneven-aged forests, not the further development of uncharacteristic forests with one dominant age class. Management that focuses strictly on large tree retention would result in unnatural, homogenous, and unsustainable forest landscapes dominated by mature forests everywhere. This historically unprecedented condition would be subject to large-scale and severe losses of forest vegetation over time due to insects, disease, wildfire and insects. Removal of some large trees is necessary in order to improve resilience and sustainability of the forest.

The proposed LTRS alternative does not address how it would take into account fuel loading/arrangement, canopy base height, and local topography, nor does it tell why it would be better than the proposed alternatives at avoiding large-tree removal. Table 26 in the DEIS display the analysis in regards to surface fuel loading, canopy base height, and canopy bulk density. These factors were analyzed for each alternative. The Fire/fuels report (PR 443) lists these three elements and describes how the action alternatives would affect them (page 4-5, 8-20).

9. The Rim Lakes forest plan amendment comes from the 2007 implementation guide for the R3 Goshawk, which has never undergone NEPA review. The DEIS fails to disclose them as well, including impacts to sensitive species, such as goshawk.

The “New Goshawk Guidelines – USDA 2007” referenced in the comments were not used for analysis, standards, or guidelines. Those implementation guidelines were never adopted by the Forest, or the Region, and have not been used by this project.

The Forest Plan Standards for northern goshawk habitat directs that management be focused on development and maintenance of uneven-aged stand conditions. The 1996 Forest Plan Guidelines for Mexican spotted owl (MSO) habitat recommends uneven-aged management systems as preferred to even-aged management systems. The best available science for local forest ecology demonstrates that historic natural forest conditions were uneven-aged forest stands.

The site-specific forest plan amendment included in Rim Lakes Project was intended to clarify that direction, not replace it. It was developed from the Desired Conditions that are incorporated into the draft Apache-Sitgreaves Forest Plan Revision process and best available science describing historic reference condition. (White, 1985 (PR 43) and Woolsey 1911 (PR 1)) These site-specific Desired Conditions and related amendments are undergoing NEPA analysis and disclosure in this environmental document (DEIS).

The analysis for wildlife is found in the DEIS and considers the effects of the treatments (page references 46, 100, 171, 192, 209, 218, 230). Northern goshawk were evaluated in the Wildlife Specialist Report at three scales and included in the DEIS (pages 112-115; 120-128) and wildlife specialist reports (PR 437, PR 438, PR 520).

In addition, the analysis for the effects of the amendment includes a report updating the Forest Management Indicator Species in August, 2012 (PR 521). This Forest report was utilized to update the MIS analysis in the Rim Lakes Project. The Rim Lakes Project analysis considered 11 MIS species as well as aquatic macroinvertebrates. After considering the 2011 Wallow Fire,

neither action alternative was found to affect forestwide trends. These trends include the upward trends that are established for many species or the downward trends established for mule deer and macroinvertebrates (DEIS page 133).

10. Site-specific forest plan amendments are being considered by other Forests for other projects and should be considered together.

Cumulative effects for the project are disclosed for the appropriate resources in the DEIS. These disclosures include the Mexican spotted owl.

During Endangered Species Act (ESA) consultation for Apache Sitgreaves Forest Plan (concluded April 2012), the multi-forest programs are considered. In addition, Forest Plan revisions are well underway on the Kaibab, Coconino, Prescott, and the Apache-Sitgreaves NFs. These plan revisions are being conducted under a separate process and use the desired conditions being applied in the Rim Lakes Project. Each would be evaluated at the Forest scale, and where appropriate (e.g. ESA) considered at larger scales as desired conditions are achieved in Northern Arizona.

The plan amendment and analysis for the Rim Lakes Project is specific to the Rim Lakes area.

11. Neither of the action alternatives will meet Forest Plan guidelines for canopy cover in northern goshawk habitat because they will not meet the canopy cover requirements of the Forest Plan.

This project includes a forest plan amendment that relates project purpose and need to the best available science for restoration treatments. The DEIS explains why the amendment is needed, and it describes how the forest plan amendment will be implemented. This amendment has been analyzed, and the effects have been disclosed in the DEIS. This project's preferred alternative (B) includes a plan amendment that clarifies that canopy cover applies only to the VSS 4-6 groups. It does not apply across all project area stands (DEIS page 27).

Canopy cover is not evaluated at the project scale because it cannot be accurately accomplished. Effects to forest density are disclosed in terms that can be accurately assessed (basal area, trees/acre, and stand density index). Canopy cover is a spatially dependent value (where the trees are located is just as important as how many trees). As such, canopy cover and the effect of various alternatives cannot be adequately modeled at the project-wide scale. However there is a clear discussion of project consistency with Forest Plan requirements. There are specific statements that the plan requirements will be met during project implementation, and there are clearly specified design criteria that demonstrate how this will be accomplished (DEIS appendix B). For example, all PFAs would be managed to meet canopy cover percentages within VSS 4, 5, and 6. See DEIS Appendix A, page 251, for details on basal area equivalents which meet the canopy cover requirements.

12. The document must disclose spotted owl impacts, but lacks important information about spotted owls near the project area. In addition, this project will affect thousands of acres of MSO critical habitat, including PACs. The USFWS must be consulted about how this project may affect the MSO including critical habitat.

A primary purpose of the project is protection of the spotted owl and its habitat. This project was planned in strict accordance with the Forest Plan/MSO Recovery Plan (1995) requirements for MSO protected and restricted habitats. The project does not propose mechanical treatments within any nest/roost core area of any of the 4 PACs within or partially within the project area.

One PAC nest/roost will be exposed to broadcast burning outside of the breeding season in order to benefit the owl habitat over the long-term (DEIS page 91). Burning in this way does not change the forest structure, reducing surface fuels such as duff and litter (DEIS page 92).

The USFWS has reviewed the project in an appropriate level of consultation with the Forest Service and has concurred with the determination that the project “may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat.” The issuance of a Biological Opinion is not applicable under the informal consultation process. There is no “take” associated with the project. (Concurrence letter, PR 444), an opinion reaffirmed in June 2012 (PR 511).

The 2004 MSO critical habitat final rule clarified the primary constituent element (PCE) descriptions to assist landowners and managers in identifying areas containing these elements. Critical habitat is defined as those areas within the mapped unit boundaries that meet the definition of protected or restricted habitat as defined in the 1995 Recovery Plan (PR 104).

Designated critical habitat acres within a “Critical Habitat Unit” include only those acres defined as protected and restricted habitat in the Apache-Sitgreaves Forest Plan. Other forested and non-forested vegetation types occur within the Critical Habitat Unit boundaries but are not considered designated critical habitat. The project area includes areas that do not meet the definition of critical habitat and therefore do not contain the necessary Primary Constituent Elements as defined in the Final Rule designating critical habitat for the spotted owl (USDI 2004).

As described in the DEIS, 3,886 acres within the critical habitat boundary have habitat characteristics that meet the definition of critical habitat and contain the PCEs (DEIS, page 85). Approximately 22,507 acres within the critical habitat boundary would be treated during the 15 year implementation by low severity prescribed fire, which would not result in adverse effects (DEIS pages 98 and 102), but provide for protection of critical habitat and PCEs. The USFWS concurred with this evaluation.

The cumulative effects under the Endangered Species Act require consideration of future State and private activities—that do not necessarily involve Federal activities—that are reasonably certain to occur within the action area of the Federal action subject to consultation. These are considered in the analysis for the species and critical habitat. Therefore, analysis of the effects of this project does not occur in a vacuum but is considered during consultation with the Fish and Wildlife Service. Past actions or impacts to the species, its habitat, and critical habitat are considered during the establishment of the status of the species and its critical habitat. The analysis of effects related to the Rim Lakes Project considers the impacts upon the adjusted (if needed) status for the species and its critical habitat to determine if a jeopardy or adverse modification threshold has been surpassed. In consultation with the USFWS, this project was not considered to impose a take or jeopardy to the species.

13. The 1996 amendment requires monitoring, which has not been done for the Rim Lakes project. There is likely unauthorized take and so this project cannot be implemented without consultation with the USFWS and appropriate monitoring.

This group of comments asserts the Forest must implement monitoring consistent with the consultation results. Therefore, according to these comments, because the Forest Service has failed to monitor spotted owl populations, as required, there is no way to know how this amendment, as well as similar amendments to other Forests, will affect the species.

The Apache-Sitgreaves Forest Plan requires MSO Monitoring that has occurred for the Rim Lakes Project area as documented in the BA (PR 427) and by the Rim Lakes Wildlife Biologist monitoring summary (Vaughn 2012, PR 554).

As noted in the monitoring summary, future MSO inventory/survey of affected PACs or protected and restricted habitat will not be conducted until either a time of implementation is decided upon or the 5 years between survey efforts has passed, whichever comes first, which is consistent with the 2013 MOS MSO Monitoring Protocol by the US Fish and Wildlife Service (PR 563).

14. Eliminating the MSO monitoring requirements in the Forest Plans without amending the Plans through the required process violates NFMA.

The Forest Service completed re-initiation of consultation on the effects to listed species from the Apache-Sitgreaves National Forest Land and Resource Management Plan (Forest Plan) in 2012. The FWS issued a Biological/Conference Opinion (“BO”) for the Apache-Sitgreaves National Forest Land and Resource Management Plan on April 30, 2012 (PR 506). The BO complies with the requirements of the Endangered Species Act (“ESA”) and supersedes the 2005 BO for all Forest Plans of the Southwestern Region; just as the 2005 BO for the Forest Plans superseded the 1996 BO for the Forest Plans. Non-discretionary, reasonable and prudent measures and their implementing terms and conditions are included in the 2012 BO. Compliance with the 2012 BO, as well as the consultation process itself, constitutes compliance with the ESA, 16 U.S.C., § 1536.

The 2012 BO contains the regulatory elements necessary for the Forest Service to remain in compliance with the ESA §7(a)(2). This consultation will be in place until the Apache-Sitgreaves NFs completes a revised Forest Plan, at which time another consultation with the FWS will commence. The Rim Lakes Project DEIS describes how the proposal meets the 2012 terms and conditions (DEIS pages 102-105).

In addition, the 1995 Mexican Spotted Owl Recovery Plan has been superseded by the 2012 Revised Mexican Spotted Owl Recovery Plan (PR 541), including the strategy for population trend monitoring necessary to delist the species. Regardless, population trend monitoring is not a part of this project, is not project- or site specific, and therefore is a separate issue and cannot be addressed at this scale.

The 2012 BO for the Apache- Sitgreaves National Forest Plan includes monitoring for incidental take. Regulations in 50 CFR §402.14(i)(3) states that in order for the federal agency to monitor the impacts of action, it must report the progress of the action and its impacts on the species to the Service (FWS) as specified in the Incidental Take Statement. This requirement does not include population trend monitoring as described in the 1995 MSO Recovery Plan, which was set forth to establish delisting criteria.

The Forest Service has participated in the collaborative process involving population monitoring at the recovery unit level. A pilot study was funded by the Forest Service which concluded that the proposed population trend monitoring in the recovery plan was deemed impractical to implement. No further effort by the collaborative group or the Recovery Team has been proposed since. A new strategy, however, has been proposed in the Revised Mexican Spotted Owl Recovery Plan (FWS 2012) in which the Forest Service is actively collaborating with the FWS to implement range-wide monitoring to assist in determining if delisting criteria have been met. The scale of the Rim Lakes Project is outside the scope of these Forest Plan standards and guidelines

for monitoring of range-wide population and habitat and as such is not applicable at the site-specific level.

Information gathered regarding gross changes in owl habitat continue to be tracked and reported to the USFWS in annual reports (PR 348, PR 398, PR 404, PR 469, PR 556).

15. There needs to be consultation with the USFWS about the effects to the MSO as a result of the large fires that occurred during the last several years.

A number of large wildfires occurred in the Southwestern Region in 2011 and 2012. These comments have identified six of those fires: Wallow, Horseshoe II, Murphy Complex, Las Conchas, Whitewater Baldy Complex, and the Little Bear. The Forest Service immediately initiated emergency, expedited consultation for these fires by contacting the appropriate FWS Ecological Services field offices at the time of the emergency.

The Forest Service submitted Biological Assessments (BA) evaluating the response to, and the impacts of the Forest Service emergency response on affected species and their habitats, including documentation of how the Service's (FWS) initial recommendations were implemented, for some of the above wildfires.

Initiation of consultation for each of the emergency responses occurred on November 7, 2011, for the Wallow Fire, February, 2012, for the Las Conchas Fire, and September 18, 2012, for the Little Bear Fire. The BA for the Horseshoe II, Murphy Complex, and Whitewater Baldy Complex fires have not yet been completed and submitted to the FWS. With the exception of the Whitewater Baldy Complex Fire and the Little Bear fire, both of which occurred after the issuance of the 2012 Forest Plan Biological Opinion, the impacts associated with the emergency responses were submitted to the FWS to incorporate into the status of the species during consultation for each of the affected Forest Plans of the Southwestern Region. The Forest Service has submitted information to the FWS on the nature of each of the wildfires, the justification for the expedited consultation (as displayed through FWS involvement during the actual emergencies), and the impacts to threatened and endangered species and their habitat (e.g., BAER and wildfire information reports).

Emergency Section 7 consultation and conferencing for suppression and emergency restoration (BAER) activities was submitted to the US Fish and Wildlife Service for the Wallow Fire on November 7, 2011. The USFWS has subsequently requested an extension due to other priorities and the Forest does not have a timeline for completion. However, it's important to recognize that the Forest has initiated Formal Consultation with the USFWS with BA's addressing effects analysis for MSO and its critical habitat for both the Wallow Fire BAER (PR 466) and Wallow Fire suppression actions (PR 467).

16. Old growth habitat is important habitat that provides different structure and function from younger forests.

These comments assert that most of these old growth forests have been eliminated from the Southwest. The 1996 plan amendment defines old growth and requires assigning areas of old-growth for current and future use. In scoping comments, the Center for Biological Diversity stated that the analysis must disclose the spatial extent of old growth stands that meet Amended Forest Plan criteria. According to their comments on the DEIS, it lacks this information and fails to disclose where the existing old-growth lies and how this project would impact that old growth.

As noted in the DEIS, the Rim Lakes project will focus primarily on retaining large trees (pages 57-58). However, removal of some (approximately 11 percent) of large young trees greater than 16 inches would occur in order to create the grass forb shrub interspaces necessary to restore spatial distribution and structure to pre-fire suppression conditions characteristic of these frequent fire forests which will be fire-resilient stands. Rim Lakes manages for increased old growth forests while producing more fire-resilient forest conditions. It also restores spatial distribution and structure characteristic of pre-fire suppression conditions.

The project proposes to allocate above the forest plan requirements of 20 percent for ponderosa pine and mixed species within the project area. Old growth components would be managed to meet forest plan requirements for old growth characteristics. Table 22 of the DEIS page 59 reflects the number of acres allocated for old growth managed in the project area, with 43 percent of mixed conifer and 27 percent of the Ponderosa pine vegetation type being allocated as old-growth.

Stands proposed for thinning would develop towards old growth characteristics described in the forest plan over time (DEIS, page 59). As noted in the field trip on July 8, 2008 with the collaborative groups, the prescriptions would focus on leaving the largest trees in the project area (PR 338 and PR 339).

As noted in the DEIS, seven percent of the project is currently allocated for old growth management. One of the purposes of the project and one of the actions proposed is to bring this allocated percent in line with the Forest Plan desired condition.

The 1996 A-S Forest Plan states that allocations will consist of landscape percentages meeting old growth conditions and does not require specific areas. However, the Rim Lakes project went beyond that requirement to include specific stands and their allocations in the silviculture specialist report appendices because these have the greatest potential for meeting all of the characteristics eventually. Other areas would qualify as identified in figures 2 and 3 of the silviculture report as defacto areas within stands that were not counted as part of the percentage. These areas cannot be mapped but would be managed towards old growth conditions.

Two forest types were identified in the Rim Lakes project as below the allocated amount, mixed species and ponderosa pine. The current condition of allocated old growth for the project is below forest plan percentages as reflected by table 22 in the DEIS.

Old growth allocated for the Rim Lakes project may not immediately meet all structural attributes found in the forest plan. However, management of these areas would move them towards all structural attributes of old growth found in the forest plan. Maintaining the health and vigor of trees 18 inches and greater would be an emphasis in old-growth allocated areas, with these trees retained except for public safety, and protection of residual stand from insect and disease (DEIS page 24).

17. The Forest should identify methods and information used to determine if the Rim Lakes Project will maintain viability of Management Indicator Species (MIS).

A Report updating the Forest MIS was finalized in August, 2012 (PR 521). This Forest report was utilized to update the MIS analysis in the Rim Lakes Project. An addendum analyzed the updated forest-wide habitat and population trends and environmental consequences for the project following the Wallow Fire (Addendum to Wildlife and Rare Plants Specialist Report:

Management Indicator Species, PR 520). These updates in the 2012 MIS addendum were incorporated into the DEIS (pages 132-167). The result of this analysis shows that the Rim Lakes Project does not change the trends, whether upward for most species, or downward trends for mule deer or macroinvertebrates (DEIS page 133).

18. Actions in the alternatives that reduce crown bulk density will affect sensitive wildlife associated with closed canopy and so must consult with the US Fish and Wildlife Service to meet requirements of the Endangered Species Act (ESA).

According to these comments, the Forest must consult with the USFWS to assure the actions do not jeopardize species per the ESA, particularly by removing MSO PCE, by removing large trees from Allen's bat habitat and red squirrel habitat. The ESA applies to the threatened Mexican spotted owl but not the other two species mentioned in the comments.

Analysis of effects for these species is documented in the DEIS. Project design criteria have been incorporated to assure maintenance of desired canopy cover within mid-to-old tree groups (VSS 4, 5, 6) during implementation that meets wildlife habitat needs.

For sensitive species, such as goshawk, effects analysis are found in the DEIS and show the preferred alternative would meet the northern goshawk recommendations and would move the habitat towards desired conditions (DEIS, pages 115-128).

Additionally, treatment activities within many of the areas (old growth, MSO protected, and northern goshawk habitat with slopes greater than 40 percent) will have minimal change in canopy, only understory effects (DEIS, pages 98, 115-116, 162).

Allen's lappet-browed bat is a sensitive species, with effects summarized in the DEIS (pages 108 and 129) from Wildlife Specialists Report (PR 441, pages 34, 86-88); cumulative effects were analyzed (pages 145-146). This analysis included effects snag habitats. Mitigation measures for snags appear on Appendix B of the DEIS, page 267. Existing snags are to be protected outside of landing areas. Recruitment of snags above the forest plan standards would occur as marking is completed to plan and retain 18 inch and larger trees for future snags.

For red squirrel, there are no specific Forest Plan guidelines because this species is a Management Indicator Species (MIS). Approximately 8,127 acres representative of red squirrel habitat occur within the project area (DEIS Tables 69, page 133 and Table 70, page 135). This is also described in the Wildlife MIS addendum (PR 510, pages 17-20). The treatment in red squirrel habitats would be included within MSO Protected and Restricted habitats (not Northern goshawk treatments) that provides for existing or future mature mixed conifer forest structure that benefits red squirrel (DEIS page 162). Neither alternative B nor alternative C would alter red squirrel "Declining" Forest-wide habitat trend and its "Stable to Declining" Forest-wide population trend.

Section 3: Detailed Responses to individual comments

Commenter	Number	Response
Hopi Tribe (HT)	2	The Apache-Sitgreaves National Forests recognize Hopi's claim of cultural affiliation to the prehistoric archaeological sites of their ancestors. No additional comments were provided by the Tribe.
HT	3	Copies of the cultural resource survey reports for the Rim Lakes Project proposed action have been provided to the Hopi Cultural Preservation office.
HT	4	The site record was provided to the Hopi Cultural Preservation Office.
HT	5	No Response needed.
White Mountain Apache (WMAT)	6-7	The ASNF will follow the conditions of the cultural resource clearance 2007-01-016B. These conditions include the stipulation that mechanized treatment activities will avoid archaeological sites; and if additional sites are discovered all work in that location will cease until it is determined that the activity will not adversely affect historic properties (per 36 CFR 800). Project activities will be conducted in compliance with the Region 3 Programmatic Agreement regarding Historic Property Protection (OR 190) and Responsibilities and the Native American Graves Protection and Repatriation Act (NAGPRA). The DEIS Appendix B includes mitigation measure to protect cultural resources (pages 255-257). Based on this consultation, no follow up is necessary, no studies are necessary. Clearance documents are found in the project record (PR 272 and PR 371). Consultation with the tribes occurred through correspondence, including a letter from Supervisor Zornes to Tribes (PR 513), followed by a response from White Mt. Apache Tribe (PR 514) and the Hopi Tribe (PR 515).
Arizona Dept. of Environmental Quality (ADEQ)	8	No Response needed.
ADEQ	9	Temporary roads prescribed with this project are deemed part of silvicultural activities and are to be closed and returned to a productive condition upon completion of the project as described within the project's Best Management Practices (BMPs). A clarifying email from the ADEQ said the following: "Thank you for the call concerning ADEQ's comments submitted on the Rim Lakes Forest Restoration Project. Upon further research, we agree that the proposed construction of the temporary roads should be categorized as "non-point source" according to 40 CFR § 122.27(b). As such, the proposed activities of uneven-aged selective cutting of trees, and construction of temporary roads would not be subject to Arizona's Clean Water Act AZPDES permit requirements." (PR 557).
ADEQ	10	The Rim Lakes project has no dredge or fill project activities identified that require the need for a CWA section 404 permit. If the need arises due to changed project conditions, a 404 and subsequent 401 will be prepared and submitted to the Army Corps of Engineers and ADEQ before the specific activity is allowed to proceed.
ADEQ	11	Bear Canyon Lake is listed in the latest 2010 303(d) list. However no water quality standards were identified as being exceeded by ADEQ.

Commenter	Number	Response
		<p>Consequently, more monitoring is recommended. The listing was due to an EPA over-file due to low pH measured in 2005. Based on analysis, with Site specific BMPs in place for silvicultural activities associated with the Rim Lakes project, there is limited adverse effect to the water quality from project activities. (Watershed report PR 452 page 21; DEIS pages 201, 205, 207 and DEIS Appendix B pages 259-265).</p> <p>These BMPs will be implemented and monitored for effectiveness as required in our intergovernmental Memorandum of Understanding between the State of Arizona and Southwest Region, Forest Service. Corrective actions will occur if monitoring demonstrates need. There are no identified need for permits</p>
Wild Earth Guardians (WEG)	12	See responses to comments 13 through 43 below.
WEG	13, 14, 15, 16, 17	<p>The project initiation letter (PR 227) dated September 16, 2005 states that the project may be analyzed using the authorities of the Healthy Forest Restoration Act, based on proximity to a community covered by a Community Wildfire Protection Plan (PR 200), and the existence of Mexican Spotted Owl habitat for which the project could provide enhanced protection from catastrophic wildland fire.</p> <p>A proposed action was sent out to the public on December 19, 2007 (PR 285) inviting interested parties to an open house and field trip for the project, which was being proposed under the Healthy Forest Restoration Act (HFRA). The letter and attached project description noted the area as Fire Regime Condition Class 3, at risk communities, and the presence of T&E habitat. The condition class determination is also documented in the Fuels Specialist Report (PR 443 page 9). The DEIS continues to describe the purpose of this project in terms of HFRA purposes (DEIS pages 1-2). The DEIS identifies 4 Mexican spotted owl (MSO) protected activity centers (PACs) within or overlapping the project area and 14 PACs that adjoin the area that are at risk of stand replacing wildfire. The DEIS also identifies 11,276 acres (page 42) of Mexican spotted owl habitat at risk to stand replacing fire within the project area. According to HFRA (PR 191) it is appropriate to protect threatened and endangered species and/or their habitat. The proposed project would provide enhanced protection from wildfire for Threatened Mexican spotted owl, as well as habitats thus qualifying as an "authorized" and "covered project under HFRA (p 13). The DEIS (page 66) table 25 displays that the proposed actions would decrease passive and active crown fire in all MSO habitat. Maps on pages 68 and 69 of the DEIS display the reduction in wildfire potential for the action alternatives. In May 2004, the "Apache, Coconino and Navajo Counties Community Wildfire Protection Plan for At-Risk communities of the Sitgreaves National Forest (CWPP) was finalized (PR 200). This plan includes the community of Forest Lakes which adjoins and overlaps the project area and is identified as a community at risk. The Fuels Specialist report reinforces this purpose and need for this project to meet direction in the CWPP (PR 443 page 5).</p>
WEG	18	<p>As described in response to comment 14, the CWPP was developed with public involvement. It was used to develop this project in 2005-2007.</p> <p>In May 2004, the Community Wildfire Protection plan for At-Risk Communities of the Sitgreaves National Forest in Apache, Coconino, and Navajo Counties (PR 200). This plan includes the community of Forest Lakes which adjoins and overlaps the project area and is identified as an at</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		<p>risk community.</p> <p>This CWPP was a collaborative effort of the Apache, Navajo, and Coconino Counties, Towns of Pinetop-Lakeside, and Show Low, Pinetop, Lakeside, Show Low, Linden, Clay Springs-Pinedale, Heber-Overgaard, Forest Lakes Fire districts, White Mountain Apache Tribe, Arizona State Land Department, Arizona Game & Fish, Bureau of Indian Affairs, Fort Apache Agency, and the Apache-Sitgreaves National Forests. Public collaboration on specifics of the project began in December 2007. A proposed action and invitation to the public was sent out on December 19, 2007 (PR 285). An open house was advertised in the Mogollon Connection (PR 300), White Mountain Independent (PR 303), and the Pioneer Newspaper (PR 301). The open house was held on January 26, 2008 with maps and treatment descriptions for the public (PR 305, 306, 307, 308).</p>
WEG	19	<p>See response to comment 18 and 21. FRCC 3 indicates at risk for threatened and endangered and sensitive species habitat, watershed, and community due to high risk of severe crown fire.</p> <p>The project initiation letter dated September 16, 2005 (PR 227) states that “the project may be analyzed using the authorities of the Healthy Forest Restoration Act, based on proximity to a community covered by a Community Wildfire Protection Plan, and the existence of Mexican Spotted Owl habitat and sensitive species for which the project could provide enhanced protection from uncharacteristically severe wildland fire.” A proposed action was sent out to the public on December 19, 2007 (PR 285) inviting interested parties to an open house and field trip for the project which was being proposed under the HFRA. The letter and attached project description describes the area as Fire Regime Condition Class 3, at risk communities, and the presence of T&E habitat. The DEIS identifies 4 MSO PACS within or overlapping the project area and 14 PACs that adjoin the area that are at risk of stand replacing wildfire. The DEIS also identifies 11,276 acres (page 42) of Mexican spotted owl habitat at risk to stand replacing fire within the project area. The proposed project would provide enhanced protection from wildfire for T & E species and their habitat thus qualifying as an “authorized” and “covered project under HFRA (p13). The DEIS (page 66) table 25 displays that the proposed actions would decrease passive and active crown fire in all MSO habitat. Maps on pages 68 and 69 of the DEIS display the reduction in wildfire potential for the action alternatives. In May 2004, the Community Wildfire Protection plan for At-Risk Communities of the Sitgreaves National Forest in Apache, Coconino, and Navajo Counties (PR 200). This plan includes the community of Forest Lakes which adjoins and overlaps the project area and is identified as an at-risk community</p>
WEG	20	<p>The DEIS displays the current FRCC under alternative A as FRCC 3. Table 27 (page 72-73) in the DEIS, including the graph, displays the FRCC for the current condition of the area and the percentages that would result from the proposed treatments.</p> <p>As noted in the Fuels Specialist Report (PR 443 page 9) the use of FRCC was determined to be a valid method to measure the changes between no action and the action alternatives. As defined in the 2010 Guide to Fire Regime Condition Class (RMRS GTR 292), FRCC provides assessment at both the Landscape and stand scales (PR 403, page 2). FRCC is also used at the National scale, but is appropriately used as a landscape tool in the Rim Lakes analysis. Field sampled stand data in conjunction with field verified remotely sensed data was used to analyze FRCC at this finer scale, which addresses the concern the comments raised using the Schmidt et al. 2002</p>

Commenter	Number	Response
		citation.
WEG	21	<p>As noted in response to comments above, the use of HFRA was first identified in the project initiation letter (PR 227), the scoping letter (PR 285) and in relevant specialist reports, such as the Fuels Report (PR 443 page 5).</p> <p>The DEIS summarized this analysis (pages 1-2) in describing the purpose and need (page 3) and in relation to fire hazard (page 9) Using the criteria listed in Comment 14 Rim Lakes fall under 3 of the 4 criteria. (I) WUI, (II) FRCC 3 across municipal watersheds and (IV) Threatened and Endangered habitat at risk of undesirable fire effects.</p>
WEG	22	<p>The Community Wildfire Protection Plan for At-Risk Communities of the Sitgreaves National Forest in Apache, Coconino, and Navajo Counties was developed and finalized in 2004 (PR 200). This was used to support the project at the project initiation letter (PR 227) and scoping (PR 285) This report is available online as it is used as an example for CWPP development.</p> <p>The Rim Lakes EIS area is larger than the area analyzed for CWPP, but also the WUI aspect of the project is not the primary need for the project. Protection of habitat for a threatened species is an emphasis, as well as restoring resilience and sustainability of the forest ecosystem.</p>
WEG	23	see 18 and 19
WEG	24	The public was involved in development of the CWPP (PR 200), and reference to this plan was included in the 2007 project scoping letter (PR285), serving as one reason to support the purpose and need. See comment 18.
WEG	25	See comment 18 and 24.
WEG	26	See comment 18 and 24.
WEG	27	<p>The Healthy Forest Restoration Act (HFRA) (PR 191) was passed into law to deal with Hazardous Fuel Reduction on Federal Land. It was largely based on collaboration with local communities through the development of Community Wildfire Protection Plans. It provides for the identification and prioritization of areas for hazardous fuel reduction treatments that will protect at-risk communities and essential infrastructure.</p> <p>HFRA does not limit tree removal to only small trees as claimed by Wild Earth Guardians. HFRA does include direction for old growth and large tree retention as stated below.</p> <p>Section 102 e (2) provides Old Growth Stands project requirements. In carrying out a covered project, the Secretary shall fully maintain, or contribute toward restoration of, the structure and composition of old growth stand according to the pre-fire suppression old growth conditions characteristic of the forest type, taking into account the contribution of the stand to landscape fire adaptation and watershed health, and retaining the large trees contributing to old growth structure.</p> <p>The Rim Lakes propose action will not remove existing old growth stand structure. Some (very few) diseased old trees may be removed for health and safety or ecological reasons related to protection of younger age classes. Existing old growth groups of trees will be retained. In fact, treatment described in Alternative B will result in an acceleration of growth of large young trees, creating larger trees more quickly than the other alternatives and restore the structure and composition toward pre-fire suppression old</p>

Commenter	Number	Response
		<p>growth in the project area. The primary focus of this project is to restore ecosystem resiliency by and restoring the uneven-aged forest structure and species composition toward pre-fire suppression old growth forest characteristics in the project area.</p> <p>The project proposes to allocate above the forest plan requirements of 20% old growth for ponderosa pine and mixed species within the project area. Old growth components would be managed to meet forest plan requirements for old growth characteristics. Table 22 of the DEIS page 59 reflects the number of acres allocated for old growth managed in the project area. Stands proposed for thinning would develop towards old growth characteristics described in the forest plan over time (DEIS, page 59). As noted in the field trip on July 8, 2008 with the collaborative groups, the prescriptions would focus on leaving the largest trees in the project area (PR 338 and PR 339).</p>
WEG	28	<p>Section 102. (f) of HFRA provides for large tree retention so that (A) projects focus largely on small diameter trees, thinning, strategic fuel breaks and prescribed fire to modify fire behavior, as measured by the projected reduction of uncharacteristically severe wildfire effects for the forest type and (B) maximizes the retention of large trees as appropriate for the forest type, to the extent that the trees promote fire-resilient stands.</p> <p>As noted in the DEIS and silviculture report (PR 449 and PR 553), the Rim Lakes Project will focus primarily on retaining large trees. However, removal of some (approximately 11%) of large young trees > 16 inches would occur in order to create the grass forb shrub interspaces necessary to restore spatial distribution and structure to pre-fire suppression conditions characteristic of these frequent fire forests which will be fire-resilient stands. Rim Lakes appropriately manages for increased old growth forests while producing more fire-resilient forest conditions. It also restores spatial distribution and structure characteristic of pre-fire suppression conditions. The current forest structure relative to the 1911 forest structure for northern Arizona. has also been analyzed using FIA (Forest Inventory and Analysis) data (PR 562).</p> <p>Based on this comparison, there is an average of 6.51 more trees per acre > 16" dbh than in 1911. Overall stand average tree size has declined relative to 1911, but this average reflects the geometric increase in the number of small diameter trees per acre, and not significant changes in the per acre number of trees > 16" dbh.</p> <p>There are currently more trees per acre larger than 16" dbh on the Apache-Sitgreaves NFs than were measured in northern AZ in 1911. The very largest trees (greater than 26" dbh) were not very numerous historically, representing only one tree per every 2-4 acres in 1911.</p> <p>The Rim Lakes Project is consistent with the Health Forest Restoration Act, because it focuses on restoration of characteristic forest structure and processes. As noted in. HFRA Section 102(f)(2) nothing in subsection 102(f)(1) requiring large tree retention should be interpreted in a manner that "prevents achievement of the purposes" of HFRA to reduce wildland fire risk. This is confirmed in FS guidance, "The Healthy Forests Initiative and Forests Restoration Act, Interim Field Guide," page 29 which states, "the large tree retention requirements of Section 102(f) must not prevent agencies from reducing wildland fire risk to communities, municipal water supplies, and at risk Federal land." (PR 197)</p> <p>As presented in the Silviculture Specialist Report (PR 449 and PR 553), the size class of 9-16 DBH trees represents the predominant size class on the</p>

Commenter	Number	Response
		landscape and some level of treatment of this size class is necessary to achieve wildland fire objectives. This can still be done while retaining large trees.
WEG	29	The analysis of the number of trees greater than 16 inches diameter is in the record (DEIS p 57-58, Silv Report PR 449 and 553). See also response to comment 28. Trees greater than 9" dbh represent the predominant size class and comprise the greater number of trees per acre. No effective treatments could be considered without treating trees of these sizes.
WEG	30	<p>The "New Goshawk Guidelines – USDA 2007" reference was not used for analysis, standards, or guidelines (PR 270). Those implementation guidelines were never adopted by the Forest, nor the Region, and have not been used by this or any other project.</p> <p>The analysis in the DEIS considers the effects of the treatments using the 1996 Forest Plan amendment (DEIS pages 46, 100, 171, 192, 209, 218, 230).</p>
WEG	31	<p>The Forest Service completed re-initiation of consultation on the effects to listed species from the Apache-Sitgreaves National Forest Land and Resource Management Plan (Forest Plan) in 2012. The Biological Assessment was submitted to the FWS for the Forest Plan in 2011. The FWS issued a Biological/Conference Opinion ("BO") for the Apache-Sitgreaves National Forest Land and Resource Management Plan on April 30, 2012. (PR 506). The BO complies with the requirements of the Endangered Species Act ("ESA") and supersedes the 2005 BO for all Forest Plans of the Southwestern Region; just as the 2005 BO for the Forest Plans superseded the 1996 BO for the Forest Plans.(PR 506 pages 2-4) Non-discretionary, reasonable and prudent measures and their implementing terms and conditions are included in the 2012 BO. Compliance with the 2012 BO, as well as the consultation process itself, constitutes compliance with the ESA, 16 U.S.C., § 1536. Therefore, only the 2012 BO contains the regulatory elements necessary for the Forest Service to remain in compliance with the ESA §7(a)(2).</p> <p>The outdated and superseded 2005 BO cited in the comments is no longer a factor when determining compliance with the ESA. The comment references a Regional Report. The Apache-Sitgreaves LRMP requires site-specific assessment for MSO Monitoring that was completed and has occurred for the Rim Lakes Project area as documented in the BA (PR 437 and PR 438) and by the Rim Lakes Wildlife Biologist monitoring summary (Vaughn 2012, PR 554 and PR 555).</p> <p>As noted in the monitoring summary, (PR 555) Future MSO inventory/survey of affected PACs or protected and restricted habitat will not be conducted until either a time of implementation is decided upon or the 5 years between survey efforts has passed, whichever comes first. The US Fish and Wildlife Service has updated protocols (PR 474), which have been adapted and applied to the Rim Lakes Project in 2013 (PR 563).</p>
WEG	32	The April 30, 2012 BO (PR 506) addresses the USFS's continued implementation of the Land and Resource Management Plan (LRMP) and its effects to the 11 federally-listed species located on the Apache-Sitgreaves NFs and eight designated and proposed critical habitats (CH). This consultation will be in place until the Apache-Sitgreaves NFs completes a revised Forest Plan, at which time reconsultation with the FWS will commence. The Forest is in compliance with the requirements of § 7(a)(2) of the ESA and the current regulatory document in effect is the 2012 BO for

Commenter	Number	Response
		the Forest Plan. The 2005 LRMP BO (PR 223) has been superseded by the 2012 BO. Wild Earth Guardians does not identify any ongoing action which allegedly violates the ESA.
WEG	33	<p>See response to comments 31 and 32. Compliance with the 2012 BO, as well as the consultation process itself, constitutes compliance with the ESA, 16 U.S.C., § 1536. Therefore, only the 2012 BO contains the regulatory elements necessary for the Forest Service to remain in compliance with the ESA §7(a)(2).</p> <p>The 2012 BO for the Apache- Sitgreaves National Forest Plan includes monitoring for incidental take. Regulations in 50 CFR §402.14(i)(3) states that in order for the federal agency to monitor the impacts of action, it must report the progress of the action and its impacts on the species to the Service (FWS) as specified in the Incidental Take Statement. This requirement does not include population trend monitoring as described in the 1995 MSO Recovery Plan which was set forth to establish delisting criteria</p> <p>Monitoring and reporting in the context of ESA §7(a)(2) consultation is to assess compliance with the Incidental Take Statement as the project is implemented. On page 105 of the 1995 MSO Recovery Plan (PR 104), the Recovery Team states the “philosophy of our proposed monitoring scheme is to measure the critical variables – changes in owl numbers and changes in habitat – needed for delisting the species.” This type of monitoring is not necessary to report the progress of implementing a proposed action on a species for the purposes of tracking take identified in the Incidental Take Statement. The Forest Service will continue to report impacts to the FWS as projects are implemented consistent with the Forest Plan. This ensures that the continued implementation of the Forest Plan is not likely to jeopardize the continued existence of the MSO and all other species on the Apache-Sitgreaves National Forest.</p> <p>In addition, the 1995 Mexican Spotted Owl Recovery Plan has been superseded by the 2012 Revised Mexican Spotted Owl Recovery Plan (PR 541), including the strategy for population trend monitoring necessary to delist the species. Regardless, population trend monitoring is not a part of the Rim Lakes Project, nor is it project- or site specific, and therefore is a separate issue cannot be addressed at project-level scale.</p>
WEG	34	Both action alternatives include areas being treated with prescribed fire only (about 9,300 acres). These areas were chosen to be treated with prescribed fire only due to there being low risk of fire escape associated with fuel loadings, high probability of meeting the purpose and need for this project with fire only, and/or having resource considerations that restricted mechanical treatment. As mentioned in a similar comment from the Center for Biological Diversity, prescribed fire treatments of pine stands with high surface fuel loading also can produce high fireline intensities and result in large tree mortality due to cambial injury by heat. Therefore, some areas have been identified to be mechanically treated prior to burning. These areas have been identified as having a low probability of meeting purpose and need, higher probability for fire escape, and un-intended ecological consequences if treating with prescribed fire alone. The risk of damages from prescribed fire are less controllable in these areas than the risk of damages from mechanical treatments (which are low due to BMPs found the DEIS, Appendix B)
WEG	35	Fire records for the past 40 years indicate that the area averages 23 fire starts a year during the months of June and July. These two months historically include very dry, warm and windy conditions. Suppression efforts alone

Commenter	Number	Response
		have kept these fires small. During these type of weather conditions, fire effects are expected to be damaging to watersheds, recreational values, wildlife habitat, and other human and ecosystem values, as can be seen by the high amount of expected passive and active crown fire (67% of the area). This indicates a high probability of fire starts in the area, high hazard (crown fire), and therefore a high risk to values as documented in the DEIS and each respective specialist report.
WEG	36	Rhodes and Baker 2008 (PR 293) define an analytical model that would provide little information for the Rim Lakes area. Data from fire history records shows that the Rim Lakes area averages (over the past 40 years during June and July) 23 fires a year. June and July represent the highest risk for severe fire weather conditions. Suppression efforts alone have kept these starts from growing into large fires.
WEG	37	<p>Rhodes 2007 (PR 268 and PR 269) is less useful in the context of this project than Allen et al. 2002 (PR 161) because treatments that reduce the watershed impacts from severe fire outweigh treatment implementation impacts and damage. Analysis of the potential fire if no action is taken indicates that should one of these fires escape early suppression efforts, 67 percent of the Rim Lakes area would potentially burn with moderate to high severity. Stephens et al. 2012 (PR 509) conclude that fuel reduction objectives are accomplished with little unintended consequences. Vegetation, soils, wildlife, bark beetles and carbon sequestration exhibit subtle effects or none at all. As described in the EIS maintenance burning would be of low severity within timeframes that don't allow for high fuel loads to accumulate. This would mitigate effects. The project purpose and need is to restore forest ecosystem resilience and sustainability for the benefit of multiple resources, not just hazardous fuels reduction. At the same time, the fuels reduction and changes to fire behavior effects are not the lone basis for project justification.</p> <p>The Forest analyzed the cumulative effects of all known past, present and future prescribed and known treatments, including disposal of slash. Maintenance burns initiated by the FS beyond the scope of this project's analysis are not included. New project analysis would be necessary to determine direct and cumulative effects of the Forest's burning treatments beyond those described in the DEIS. Future unknown projects that may fall within the Rim Lakes project watersheds would also initiate new analysis to determine cumulative effects, of which the effects of Rim Lakes treatments would be considered.</p>
WEG	38	<p>The restoration objectives are to move treated areas toward healthier forest conditions by restoring vigorous growth conditions and reducing losses due to tree mortality, high-severity wildfire, and insects and diseases. The objective of the project is to increase forest health and vigor, improve forest resiliency and sustainability to stresses such as climate change (DEIS p 48). Fuel treatments have been documented to make a difference in large fires. See Wallow Fire review conducted in 201 (PR 448) and more recently by Jim Youtz, Regional Silviculturist (PR 560).</p> <p>The comment states that weather has been the driver for uncharacteristic fires in the southwest, not fuel. This statement has not been offered with any supporting evidence or studies, and does not comport with current understanding, which is that fire intensity is greatly influenced by fuel availability. Recent events show that areas burn under extreme weather conditions (Miller fire on the Gila in 2011) with little overstory mortality in forests reminiscent of desired conditions. See the response to comment 40,</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		below. Observations of the treatments in the Eagar South Project showed that they were effective in limiting damage during the Wallow Fire (PR 560).
WEG	39	<p>This Act is intended to influence Department-level decision-making. No direction exists to apply this Act at the project level. This section of the Act set up the “infrastructure” for considering the concepts of Climate Change in the USDA, and was not applied to project-level implementation.</p> <p>The USDA Climate Change office was started as a result of this piece of legislation, but this Act has not been interpreted to mean this office should be involved directly at the field level. It was intended to be a programmatic office helping to outline Departmental programs and policies.</p>
WEG	40	<p>Several areas of research provide information about climate change in the context of competing objectives, including Stephens et al. 2012 (PR 509). Also, Hurteau (2008) (PR 292) and North and Hurteau 2011 (PR 415) provide discussions of forest restoration effects on carbon storage/release. This latter paper thoroughly examines the carbon effects of forest restoration treatments vs. no treatment in southwest ponderosa pine forests.</p>
WEG	41	<p>Cumulative watershed effects were considered in the DEIS, including past, current and reasonably foreseeable actions (DEIS page 206-208). These take into account effects on nearby lands, such as a subdivision occurring, on the east side of the project area, as well as activities on the Tonto National Forest within the affected watersheds. They were considered on a watershed basis (pages 206 to 208 of the DEIS), following an established method documented in the Watershed Specialist Report (PR 453).</p>
WEG	42	<p>Cumulative watershed effects were considered for each resource area in the analysis. DEIS pages 37, 39-41, 61, 62, 75, 97, 100, 126, 160, 167, 174, 175, 176, 177, 178, 180, 182-184, 190, 191, 206-207, 217, 218, 223, 224, 229, 230, 236). Specific wildlife related pages include but are not limited to pages 75-76, 97, 100-101, and 167. The condition of the project area is described in the DEIS, page 39-40 in relation to past timber practices</p>
WEG	43	<p>A specific alternative was not suggested for this comment. Without specific recommendations for actions to achieve the purpose and need for the project, it is not clear how an alternative might proceed without some forest plan amendment, as proposed in either action alternative. The action alternatives proposed meet the requirements of HFRA.</p> <p>A project-specific amendment is necessary to achieve the purpose and need because current forest plans do not specifically describe the grass, forb, shrub interspaces that are characteristic of resilient natural forest conditions.</p> <p>Only 2.5 miles of temporary roads will be developed to implement this project, and these roads will be restored following use. This limited mileage is not significant to warrant development of a new project alternative.</p>
WEG	171	<p>The record documents the Long Tom Allotment accounts for approximately 34 percent of the Rim Lakes Project Area. It is grazed by sheep for approximately six months of the year. Sheep grazing is monitored for utilization and pastures are rested and rotated for recovery. The Limestone Allotment accounts for approximately 3 percent of the project area but has not been grazed by cattle for the past 15 years and grazing is not anticipated within the near future. There is no authorized grazing on the remaining 63 percent of the project area. (DEIS pages 60-61, 75)</p> <p>Since this project has no direct or indirect effects from grazing, grazing was</p>

Commenter	Number	Response
		<p>considered and determined to have no cumulative effect on forest health and structure. The DEIS also considered the cumulative effects of grazing to wildlife (pages 43-44, 68, 83, 123, 155, 157, 165, 178, 179, 181, 182, 191, 212, 222, 241, 245, 250, 253). Mitigation measures in Appendix B (page 262) provides for coordination on range use, including deferment after burning, to reduce impacts.</p> <p>The combined effect of ongoing projects and foreseeable projects along, above, and below the Mogollon Rim for restoration and fuel reduction provide for a mosaic of stand conditions, allowing for wildlife habitat and vegetative diversity. This same mosaic would allow for a diversity of fire effects, thereby increasing opportunities for the maintenance of forest structure and function using wildfire and prescribed fire in the long-term future (DEIS page 76).</p>
Ecological Restoration Institute (ERI)	44, 45, 46	No response needed.
ERI	47	<p>The analysis used diameter as a metric and did not focus on age of trees. The team did not collect or analyze age-class distribution information for this project because size provides a more practical measure of habitat and fire behavior.</p> <p>A table that shows the correlation between the age and VSS (size) is provided in the record as part of this response (PR 561),</p>
ERI	48	<p>Although the language of the DEIS may not align precisely with the Southwest Regions Desired Condition descriptions, the analysis in the DEIS was dependent on the desired condition as a purpose for the project. The term “gap” as defined by the Dictionary of Forestry is appropriately used throughout this analysis. Using consistent terminology to describe forest restoration concepts is a worthwhile goal that will be pursued in future project development and implementation.</p> <p>The 20% allocated for development/maintenance of forest interspaces, and the 20% allocated towards recruitment/development of forest regeneration areas apply equally to both ponderosa pine and dry mixed conifer forests within this project (except for MSO protected and threshold habitat areas).</p> <p>This project is situated on a very wet, productive location relative to most ponderosa pine and mixed conifer forests in Arizona. Additionally the parent soil materials are sedimentary in origin. All of these local site factors have resulted in forest conditions that are naturally somewhat more closed than other forests in drier settings with basalt parent material soils. Development of larger forest interspaces would result in excessive establishment of tree regeneration within a short time span, reducing the longevity and effectiveness of this project. Based on these considerations, the interdisciplinary team selected a total of 40% forest openings (interspaces and regeneration) to minimize the maintenance concerns that would result from excessive regeneration.</p>
ERI	49	<p>There is a requirement established in the Mexican spotted owl recovery plan/1996 Forest Plan amendment to use SDI as the basis for analysis. Both the silviculture report and appendix D of silviculture report discuss stand density. SDI is an established forest density metric that has long been used in the forestry profession. It is used for this project analysis as a simple measure of density, and SDI density thresholds are clearly defined for the reader in the specialist report and appendices (PR 553, Silviculture Report,</p>

Commenter	Number	Response
		<p>Table 3). SDI is simply a methodology for quantification of existing conditions and post-treatment conditions by alternative. It is considered to be the best measure for relating density to forest vegetation dynamics. Relevant SDI literature has been cited to establish the basis for the density thresholds used in this analysis.</p> <p>The DEIS compares the SDI for MSO existing conditions and desired conditions of mixed conifer and pine-oak habitats from the Forest Plan/MSO Recovery Plan (DEIS, pages 87-88).</p> <p>During development of the environmental assessment for this project, informal consultation was initiated with a Biological Assessment that was developed and provided to the USFWS, which concurred with the determinations on federally listed species and their critical habitats (Terrestrial Species Biological Assessment (PR 437 and PR 438). A concurrence letter from the USFWS was received (PR 444), followed in 2012 by a confirmation email indicating that the project is still consistent with direction (PR 511).</p>
ERI	50	<p>Tables 11 through 14 in the DEIS reflect the bark beetle susceptibility based on basal area. Alternatives B and C have a low beetle hazard due to the decrease in basal area.</p> <p>Details and analysis can be found on page 19 of the 2012 silviculture report (PR 553) and dwarf mistletoe in appendix C of the silviculture report (PR 552). Mistletoe severity is based on the number of trees infected in a stand. The stand rating is reduced as the number of trees with dwarf mistletoe are removed. Prescription examples on Appendix A of the DEIS (page 252) display how those trees may be removed through the implementation of the prescription. Favoring of southwestern white pine and where possible providing for a mix of species would aid in reducing dwarf mistletoe spread within a stand.</p> <p>The project proposes to manage dwarf mistletoe distribution and severity such that it is present in naturally characteristic distribution and severity levels. The current conditions exceed natural distribution patterns and severity, thereby jeopardizing resilience and sustainability of uneven-aged forest conditions. Dwarf mistletoe objectives do not include eradication, only managed towards more natural conditions.</p> <p>On page 21, Appendix B, of the ROD for the 1996 Amendment of Forest Plans Arizona and New Mexico, there is a requirement to manage to decrease dwarf mistletoe (PR 115). The silviculturist worked with forest pathologists to design project treatments to manage dwarf mistletoe (PR 449 and PR 553). This project is consistent with the forest plan regarding mistletoe management.</p> <p>A variety of wildlife species that occur within the project area benefit from dwarf mistletoe by both structure and food sources. Witches broom often provides a platform for nesting/resting cover for both birds and squirrels, and is a key habitat component that is identified for retention. Mistletoe berries are widely known as a food source for a variety of non-insectivorous avian species and mammals (squirrels and ungulates) that are known to occur in the project area. Northern goshawk is the only sensitive species that are believed to use mistletoe directly for a nesting platform along with its prey base using mistletoe for cover and food source. Mechanical treatments will focus management on severe infections of dwarf mistletoe (DEIS, page 116; Appendix A, page 248). Dwarf mistletoe is currently present above natural levels and will be managed towards natural variation over time with treatments while still providing habitat and food sources for</p>

Commenter	Number	Response
		<p>wide range of wildlife species.</p> <p>The project proposes to manage dwarf mistletoe distribution and severity such that it is present in naturally characteristic distribution and severity levels. The current conditions exceed natural distribution patterns and severity, thereby jeopardizing resilience and sustainability of uneven-aged forest conditions. Dwarf mistletoe objectives do not include eradication, only managed towards more natural conditions.</p>
ERI	51	<p>A single prescribed burn entry for mix conifer (MC) primarily proposed due to literature supported burn intervals (up to 25 years) occur beyond the 10-15 year timeline for this project (PR 443 -- Fuels Specialist Report). Additional considerations for a single entry in MC were analyzed in the Terrestrial Species Biological Assessment (PR 437) and Wildlife Specialist Report (PR 441). These additional considerations include: 1) desired condition for MC is to retain more down/woody debris tons/acre than other forested types; 2) mechanical treatment limitations occur within MSO protected (<9" dbh) and restricted target/threshold habitats are to retain high BA/acre, so there are variable post prescribed burn objectives which contributes to a higher complexity of prescribed burns; 3) for most of the project area, prescribed burn treatments occur after mechanical treatments are completed as a rate of approximately 6,000 acres/year, this limits the annual acreages available for prescribed burning activities. Additionally, the prescribed burn window is very narrow for MC, so there would be more opportunity for prescribed burning implementation in ponderosa pine.</p> <p>Once this project is completed, possible future maintenance burns can be analyzed separately and more precisely when those future conditions are more clearly known and impacts to the Mexican spotted owl can be more clearly considered.</p>
ERI	52	<p>See Chapter 3 in the DEIS for effects and results of the treatments. Chapter 2 page 17 describes how mechanical silvicultural cutting methods would be informed by historic conditions to guide implementation. It also describes how the combination of cutting and prescribed burning treatments, prescribed burning and broadcast burning would be used to meet objectives. Appendix A has more detailed silvicultural marking prescriptions by habitat type. It is important to note that this project does not intend to restore exact historic reference conditions on a local-site scale, but is broadly focused on restoring forest conditions with the natural range of availability.</p>
ERI	53, 54, 55	No response needed.
Arizona Game and Fish Dept. (AGFD)	56	The Forest appreciates support for the collaboration conducted for this project. See also response 14 and 18 descriptions of this project's collaboration efforts.
AGFD	57	No response needed.
AGFD	58	The intent of this comment is in alignment with the intention of the project. Cutting of trees 120 years and older will be very limited throughout the project area. It would consist of cases of public safety concerns or where necessary to facilitate development of healthy uneven-aged forest conditions.
AGFD	59	The Rim Lakes project emphasizes removal of trees less than 16 inches. See response to comment 20. Treatments focus on leaving the dominant and co-dominant trees by thinning tree groups from below which emphasizes removal of smaller trees. See Appendix A. Silvicultural Treatment Details

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		<p>in the DEIS.</p> <p>The analysis agrees with the statement that Alt. C with a 16 inch limit would limit movement toward desired conditions.</p>
AGFD	60	<p>Single tree selection is not proposed within this project because the desired conditions for goshawk management call for a distribution of VSS classes. The distribution of these classes is best managed with group selection which is the preferred method of treatment for the Rim Lakes project. Group selection allows for a percentage of the stand to be regenerated in small groups that are even-aged within the stand (PR 553, Silviculture Report). The remainder of the stand is then thinned by VSS groups as small even-aged groups. The result is uneven-aged conditions across a larger area such as the stand level.</p> <p>During implementation, existing tree groups will not be homogenized by age class. Retention will focus on leaving appropriate healthy trees and other trees necessary as wildlife habitat components to meet group density objectives.</p>
AGFD	61	<p>The DEIS purpose and alternative B are consistent with this comment. Alternative C with a diameter limit would not be as consistent with the objective stated in this comment.</p>
AGFD	62	<p>This DEIS purpose and need and treatment objectives are consistent with this view (DEIS, pages 16-28). Treatments involving oak exclosures and aspen management are included in the DEIS as other treatment objectives (DEIS pages 24). Proposed treatments focus on favoring retention and development of hardwood tree species.</p>
AGFD	63	<p>The project prescriptions (Silviculture Report PR82) focus on leaving the best formed trees in groups or as individuals. Deformed trees will be kept to meet canopy cover requirements within groups and to meet wildlife needs such as retention of squirrel nests or snag recruitment. See Appendix A. Silvicultural Treatment Details in the DEIS.</p>
AGFD	64	<p>No response needed.</p>
U.S. Environmental Protection Agency (EPA)	65, 66, 67	<p>No response needed.</p>
EPA	68	<p>Under Arizona regulations, a permit must be issued for every prescribed burn undertaken by the Forest. Fundamental requirements to the action alternatives is that air quality meets all State and Federal ambient air quality standards. The Forest and ADEQ recognize that fire emissions can cause adverse health effects and/or becomes a nuisance, but are fundamental to the disturbance ecology associated with healthy ecosystems in the project area. Prescribed burning is implemented only with approved site specific burn plans and with smoke management mitigation and approvals. All burning is conducted according to Arizona Department of Environmental Quality standards and regulations, including the legal limits to smoke emissions from prescribed burns as imposed by Federal and State Law. The Arizona Department of Environmental Quality ADEQ enforces these laws by regulating acres that are treated based on expected air impacts. These regulations ensure that effects from all burning within the area are mitigated and that Clean Air Act requirements are met. Cumulative effects from prescribed burns and from wildfires that are not being actively suppressed</p>

Commenter	Number	Response
		<p>on Federal, State, and Tribal lands, are largely mitigated through implementation of the Enhanced Smoke Management Program, in the Arizona Smoke Implementation Plan (SIP), by the Smoke Management Group. http://www.azdeq.gov/environ/air/smoke/download/prules.pdf</p> <p>The Arizona law is : Title 18. Environmental Quality Chapter 2, Department of Environmental Quality Air Pollution Controler 18 -2-1509</p>
EPA	69	<p>According Stephens et al 2012, "[d]esigning more fire-resistant stands and landscapes will likely create forests that are more resistant and resilient to the changes imposed on them by climate change. For this reason, it is more appropriate to design and test a range of specific forest structures in order to learn about their resistance and vulnerabilities rather than trying to restore an ecosystem to presettlement conditions that may not be appropriate for the future (Millar et al. 2007). Most available evidence suggests that fuel-reduction objectives are typically accomplished with few unintended consequences, because most ecosystem components (vegetation, soils, wildlife, bark beetles, carbon sequestration) exhibit very subtle effects or no measurable effects at all; similar results were found in Western Australia forests and shrub lands that were repeatedly burned over 30 years. The results presented in this article are for forests that once burned frequently with low- to moderate-intensity fire regimes; other ecosystems adapted to different fire regimes would probably exhibit different responses to fuel treatments.</p> <p>Climate change predictions suggest that warmer and dryer conditions in the Southwest are expected. These anticipated conditions will result in greater water stress leading to increased likelihood of water-stressed mortality, uncharacteristic fire, insects, and disease and other disturbances. Restoration described in the proposed action will reduce unnaturally high tree densities, resulting in decreased competition for water and nutrients that will, in turn, reduce stress on residual trees, increase their growth rates, and improve other aspects of forest productivity. Reducing both surface fuels and crown fuels (by lowering crown connectivity) and reducing the densities of less fire- and disease-resistant tree species that have encroached into these forests due to the lack of fire will increase the resilience of these forests to predicted future climates and disturbances. In these more fire-prone conditions, it restoring to the historic structure, composition, and pattern will enhance resistance to contemporary catastrophic losses in order to retain the forest ecosystems long enough to give them a chance to migrate, if that is what climate change causes. The forests in the Rim Lakes Project area are in the transition zone between ponderosa pine and the more mesic mixed-conifer forests. It is exactly to these transitions zones where the biophysical conditions currently supporting ponderosa pine forests will likely migrate to higher elevations. Restoring these more mesic forests now will enhance conditions for future migration. Increasing the chances of survival of these forests through restoration will provide opportunities to monitor, mitigate, and respond to climate changes and to monitor and investigate expected migrations of component species well into the future.</p>
EPA	70-71	No response needed.
Center for Biological Diversity (CBD)	72	No response needed.
CBD	73	A review of the objection and the regional forester's response to the object

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		<p>were reviewed so that the appropriate analysis was included in the DEIS. Instructions were given in the response to the objection and these have been incorporated into the DEIS and the Forest MIS Assessment (June 2012, PR 521):</p> <p>Additional MIS analysis has been conducted and considered in the DEIS. And Addendum to the Wildlife Report (PR 520).</p> <p>The ROD and appendices for the 1996 Amendment to the Forest Plans of Arizona and New Mexico has been included in the Record (PR 114, PR 115, and PR 116).</p>
CBD	74	<p>The Healthy Forest Restoration Act (HFRA) section 104 describes the analysis necessary for hazardous fuel reduction projects authorized under HFRA. It requires following NEPA and other applicable laws. Section 104(c) and Section 104(d) refers to the alternatives to be considered, as noted by further CBD comments below.</p> <p>1) PROPOSED AGENCY ACTION AND 1 ACTION ALTERNATIVE.—For an authorized hazardous fuel reduction project that is proposed to be conducted in the wildland-urban interface, the Secretary is not required to study, develop, or describe more than the proposed agency action and 1 action alternative in the environmental assessment or environmental impact statement prepared pursuant to section 102(2) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)). (2) PROPOSED AGENCY ACTION.—Notwithstanding paragraph(1), but subject to paragraph (3), if an authorized hazardous fuel reduction project proposed to be conducted in the wildland-urban interface is located no further than 1 1/2 miles from the boundary of an at-risk community, the Secretary is not required to study, develop, or describe any alternative to the proposed agency action in the environmental assessment or environmental impact statement prepared pursuant to section 102(2) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)). (3) PROPOSED AGENCY ACTION AND COMMUNITY WILDFIRE PROTECTION PLAN ALTERNATIVE.—In the case of an authorized hazardous fuel reduction project described in paragraph (2), if the at-risk community has adopted a community wildfire protection plan and the proposed agency action does not implement the recommendations in the plan regarding the general location and basic method of treatments, the Secretary shall evaluate the recommendations in the plan as an alternative to the proposed agency action in the environmental assessment or environmental impact statement prepared pursuant to section 102(2) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)).</p> <p>As noted by CBD, alternative C was developed as an alternative to the proposed action was developed through a collaborative process and analyzed the different approach recommended by the CBD at that time. For the EIS, the IDT reviewed the objection and provided additional information/analysis. As noted in the DEIS, review of further information did not suggest adding another alternative.</p>
CBD	75	No response needed.
CBD	76	HFRA requires the development of the no action alternative and one action alternative. As noted, Alternative C was developed in response to the large tree issue, as described in the DEIS. See 74
CBD	77	The proposal of using only existing open roads was first mentioned as follows by CBD in their objection letter (PR 465) to the EA and states “The

Commenter	Number	Response
		<p>Center urges the Forest Service to implement the Rim Lakes Project without constructing any new roads. This can be done by focusing treatments around existing open roads and in strategically located areas.” (PR 465). The Rim Lakes project is proposed without new road construction. It proposes to use existing open roads and to open closed temporary roads (to be closed at project completion). 2.5 miles of new temporary road will be constructed to implement the project (to be closed at project completion). Temporary road construction is proposed in order to avoid impacting the historic General Crook’s trail. Strategic locations were chosen and areas represented by those on the map for the action Alternatives B and C. A map of what CBD proposes as strategic was never provided to the IDT for the project.</p> <p>Average open road to use for treatment is 75 miles (DEIS pages 232-233). The existing open road system would only allow for treatment to occur within ¼ mile which is the farthest that skidding can occur going downhill. Treating ¼ mile does not meet the purpose and need of forest restoration due to the limited distance for mechanical treatment to occur. Other mechanical treatment past ¼ mile would need to be limited to trees less than 6 inches in diameter. Any trees cut larger than that and left on the ground would result in a heavy fuel loading. In some locations it would be less than ¼ mile due to other constraints such as drainages, uphill skidding, or non loggable areas.</p> <p>A very large proportion of the area is currently closed because it falls in the Rim Lakes Recreation area, which restricts the public to only open roads. Use of closed roads within the area take the operation away from heavy traffic areas.</p> <p>Approximately 12 miles would have log trucks loading on main travel ways if treatments are limited to existing open roads. An example of this is forest road 300, 169, 89A, 512, and 105. Also the placement of the temporary roads would be along ridge tops and restrict roads from being used in drainages.</p> <p>Open road density for the project area is below forest plan standards (DEIS page 232). Road obliteration of existing closed roads was outside the scope of the project and was initially proposed under a different NEPA project which was never completed. The project does not propose increasing road density. Road density reduction is not part of the purpose and need for the project. Road density is currently being addressed as part of the Travel Management. This issue was raised during the objection and was considered in the analysis. The analysis area has a high road density, but the project will not substantially change that. Policy allows for temporarily opening closed roads in order to accomplish other objectives, and then reclose them. Effects of the alternatives are displayed in the DEIS.</p> <p>An alternative that only uses existing roads would not meet the purpose and need of the project; therefore an alternative was not developed.</p> <p>This is described in the response to the objection by CBD (PR 471), which states: "The environmental effects of the proposed activities to watersheds from roads are thoroughly addressed in regards to their location and extent (density) by watershed and stream course in the Watershed Specialist Report [PR 453, page 23] and DEIS. Mitigating measures (Best Management Practices (BMPs)) are to be applied for short term impacts to protect and improve water quality from sediment derived from roads in the DEIS Appendix B. Current gully erosion and accelerated soil loss from a few open and closed existing roads are also addressed in the specialist report (PR 453) and DEIS. Furthermore, the cumulative effects analysis fully analyzes the effects of roads and other disturbances to the watersheds (PR 453, pages 4-6), as summarized in the DEIS. Roads will be decommissioned after</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		treatment from activities (DEIS appendix B). Streams within watersheds which would potentially be impacted by treatments and road activities have designated BMPs including buffer strips (DEIS Appendix B) within designated stream management zones."
CBD	78	<p>As described in the DEIS, a separate analysis, covered during travel management rule (TMR), will review the number of roads and impacts (DEIS page 236).</p> <p>Forest plan standards in terms of road density are a goal to meet in places where road density is high. There is no requirement that they be achieved, rather that if road densities are high, no action taken can move them farther away from the standards. Rim Lakes will close roads once completed, and then reclaim temp roads and so net change is zero. Cumulative effects are addressed in the DEIS. New system road construction is not proposed as part of this project. The project would provide for temporary roads of 2.6 miles comprising seven different segments, proposed to protect portions of the Crook Trail. These temporary roads will not be National Forest System roads and will be decommissioned after treatments are complete. DEIS pages 194, 195, 232, and 233 describe cumulative effects of the roads and description of temporary roads and effects. Mitigation measures are included in Appendix B to reduce impacts further.</p>
CBD	79	<p>As noted in the Rim Lakes Federal Register Notice (PR 480), scoping before 2012 occurred as part of the EA development. The Notice of Intent notes the scoping for development of the EIS, which builds from the EA, but does not imply starting the scoping process over.</p> <p>Collaborative efforts have been ongoing on Rim Lakes with the White Mountain Stewardship Multi-Party Monitoring Board and the Natural Resources Working Group since 2008 (PR 320).</p>
CBD	80	<p>As noted in the Federal Register notice and elsewhere, scoping before 2012 occurred as part of the EA development. The NOI notes the scoping for development of the EIS, which builds from the EA, but does not imply starting the scoping process over.</p>
CBD	81	<p>Discussions between the 4FRI collaborative and the Rim Lakes effort were taken up in the winter/spring of 2012 at the request of the Forest and the 4FRI group, which had been briefed about the project. Rim Lakes began as a project in 2005 with a collaborative basis in the CWPP developed through a collaborative process in 2004. Treatments developed for the proposed action came from a purpose and need defined in the CWPP and the Forest Plan, as well as developments in the best science available during the years between 2005 and 2011.</p> <p>The commenter (CBD) provided comments at that time and in fact requested that a 16 inch cap alternative be analyzed. The 4 FRI collaborative has just recently offered comments on Rim Lakes in response to the publication of the Notice of Intent dated March 29, 2012. CBD recently represented themselves as part of the 4 Fri collaborative and now claims that the Forest has not satisfied collaborative requirements of HFRA because they were not involved. The record reflects that the Forest collaborated with the local groups.</p> <p>In these comments on the Draft EIS, CBD offers the LTRS developed by the 4 FRI Collaborative for the 4 FRI project as an alternative that should be analyzed in the Rim Lakes project. CBD did not offer the LTRS as an alternative prior to this date and in fact did not attend two open houses in</p>

Commenter	Number	Response
		<p>April 2011 or April of 2012 during which Rim Lakes was discussed with the White Mountain collaborative.</p> <p>Their comments offer the LTRS alternative representing it as coming from the 4 FRI Collaborative, and asserting previous efforts at collaboration are invalid because the 4 FRI collaborative was not involved.</p> <p>The collaboration for the Rim Lakes Forest Restoration Project is documented in the record, including recent efforts to include the 4FRI collaborative in the continuing efforts of the the White Mountain groups.</p> <p>CBD now claims that the DEIS must consider the LTRS developed by the 4 FRI Collaborative on the Rim Lakes Project. The LTRS establishes 8 exception categories or situations that may require removal of larger trees (greater than 16 inches). It should be noted that the 4 FRI collaborative did not reach agreement on the Large Young Tree category deferring it for additional analysis. (PR 421 and PR 463 page 25).</p> <p>All of the applicable exception categories have been reviewed and fall within Alternative B. Alternative B provides for creating within stand openings (grass forb shrub interspaces) between VSS groups by removing trees (including large young trees (greater than 16 inches). As the LTRS suggests this will be done to emulate natural vegetation patterns described by Desired Condition consistent with existing recovery plans for Threatened and Endangered species. (PR 463, page 20). Removal of Large Young trees will be done to create within stand openings introducing the natural structure that must be present to restoring natural occurring frequent surface fire to the ecosystem. As stated in the DEIS about 31,000 trees 16 inches and greater will be removed out of 291,000 existing trees over a 30,000 acre area. These trees will be removed in a manner that re-establishes the within stand openings just as the LTRS recommends.</p> <p>Alternative B includes the elements of the large tree retention strategy that exists on the Rim Lakes project area; therefore no additional alternative is needed.</p>
CBD	82	<p>The LTRS has been evolving during the last year. Presettlement trees were considered those greater than 16 inches, and removal of any trees greater than this size was an exception. Through discussion in the collaborative, this strategy has allowed for tree removal of larger trees as a more beneficial outcome to overall management, but these discussions were not part of the collaboration in the summer 2012.</p> <p>The Path Forward document was produced in the context of the collaborative efforts with the Four Forest Restoration Initiative (4FRI). It has been reviewed and most of the ecological goals stated in the Path Forward are in line with the purpose and need for the Rim Lakes project. See also response to 81</p>
CBD	83	<p>The size of openings in Alternative B would be about the same as described in this comment. Also, criteria listed lines up with the proposed prescriptions for Rim Lakes. It is anticipated that openings greater 4 acres would be a rare occurrence. Prescriptions are written so the majority of openings are 1 acre or less. See DEIS Appendix A. Silvicultural Treatment Details in the DEIS (page 249) which calls for openings from 1/10 to 4 acres, generally falling within the ¼ to ¾ acre size. The LTRS does not have a size limit to openings. Page 22 of the LTRS states that where desired openings are tentatively identified as >0.05 acre (these openings should be established wherever possible by enlarging current within stand openings or where small diameter trees are predominant). It is not clear from the</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		comment how an alternative with similar openings would not require a similar forest plan amendment for openness. Also see response to comment 81.
CBD	84	See response to comment 81.
CBD	85	See response to comments 80 and 81.
CBD	86	See response to comment 81
CBD	87	See response to comment 79.
CBD	88	This comment includes no description for how the LRTS would be more effective in reducing fire hazard or promoting old growth structure. The action alternatives provide for mitigation measures that avoid adverse cumulative effects. The LRTS does not provide any detail for species management such as the requirements for MSO and goshawk VSS classes. It is strictly a strategy for large tree retention. Both action alternatives incorporate some of these strategies where possible and where they move the area towards the desired condition. Alternative B incorporates the elements of the LTRS where those conditions are present in the Rim Lakes Project.
CBD	89	The proposed LRTS alternative does not address how it would take into account fuel loading/arrangement, canopy base height, and local topography nor does it tell why it would be better than the proposed alternatives. Table 26 in the DEIS displays the analysis in regards to surface fuel loading, canopy base height, and canopy bulk density. These were analyzed for each alternative. The Fire/fuels report (PR 443) lists these three elements and describes how the action alternatives would change them (pages 3-5).
CBD	90	<p>Review of the Eagar South post Wallow Fire effects indicates a significant correlation between treatments and a lower intensity fire and resulting less severe fire effects. This review found the high-density forest on the hill slope south of the project area experienced complete forest mortality, but the fire behavior changed upon entering the treated areas. Heat-scorched forest mortality occurred along a narrow band where the fire behavior transitioned from crown-fire to surface fire. This band did not exceed a few hundred feet in width. Once the fire entered the treated blocks, it moved through the area as a surface fire. (Youtz 2013, PR 560).</p> <p>Also, in 2011, an effectiveness review was conducted (PR 448) that showed the treatments in WUI areas were effective at changing fire behavior.</p> <p>There is an important difference between clumpy structure with openings and contrasting even aged removal of small trees. The Fire and Fuels extension to the Forest Vegetation Simulator as used in the fire behavior/fuels analysis and in the quoted Fiedler and Keegan 2002 (PR 177) study is not spatial, which makes it unable to quantify changes in spatial distribution of fuels. It can only provide stand averages.</p> <p>To avoid this lack of spacial analysis, FlamMap was used to spatially represent the distribution of fuels in the fuels analyses. The Finney 2001 study (PR 150) assumes a post treatment fuel model that will not readily carry fire. This is not a result expected or observed in project area ecosystems and therefore is not applicable to this project. The removal of a few larger trees addresses the spatial distribution of canopy fuels and species composition. Furthermore, these cited studies deal specifically with fuels reduction while the Rim Lakes Project aims to restore composition, structure</p>

Commenter	Number	Response
		<p>and function.</p> <p>Prescribed fire will follow mechanical treatments and is expected to lift crown and address surface fuels as indicated in the Finney 2001 study. The removal of a few larger trees is to address the spatial distribution of canopy fuels and species composition. The studies referenced by the comment deal specifically with fuels reduction, while this project has broader objectives and aims to restore forest composition and structure.</p> <p>This project was planned using site-specific (stand-level) forest vegetation/fuels data. The effects of the alternatives on stand structure and fire behavior have been examined and disclosed using this site-specific information as the basis for the analysis. The best available science, methodology and analysis tools were utilized (Forest Vegetation Simulator for forest vegetation and fuels and Flammap for fire behavior) according to established procedures. This analysis documents significant reduction of fire behavior intensity and burn severity for the preferred alternative. This analysis is far more relevant to the project landscape than the non-local research cited by CBD.</p> <p>As noted previously, the 2011 Wallow Fire has provided a local demonstration of the effectiveness of management treatments similar to those proposed by alternative B for altering the spread of crown fire and restoring more characteristic fire behavior. (PR 560)</p>
CBD	91	<p>The Rim Lakes Project retains large trees as a focus. Alternative B will produce more large trees over the time frame analyzed than Alternative C. Also the large trees will be more sustainable and less susceptible to loss from threats such as insects, disease and uncharacteristically severe wildfire.</p>
CBD	92	<p>See 91. The Rim Lakes project places high value on conserving large trees (DEIS pages 7-9).</p> <p>It is not accurate to characterize the project as “logging for fuels reduction.” Rather the Rim Lakes Project removes some larger trees to ensure a spatially heterogeneous canopy fuel profile. See the response to comment 90. The project is also focused on restoring historically characteristic uneven-aged forests, not the further development of uncharacteristic forests with one dominant age class. Management that focuses strictly on large tree retention would result in unnatural, homogenous, and unsustainable forest landscapes dominated by mature forests everywhere. This historically unprecedented condition would be subject to large-scale and severe losses of forest vegetation over time due to insects, disease, wildfire and senescence. Removal of some large trees is necessary in order to improve resilience and sustainability of the forest.</p>
CBD	93	<p>See response to comment 28. As noted, large trees are common, not rare in the Rim Lakes project landscape.</p> <p>Damage can occur from mechanical thinning. However, mitigation measures are listed in appendix B to reduce damage to residual trees. Designated skid trails and log decks would be used to implement mechanical treatments. Trees are to be felled to the direction they will be removed in order to reduce erosion and tree damage. Broadcast burning will be conducted under conditions to preserve forest structure and density. These and other requirement to protect residual trees can be found in the appendix B of the DEIS. See response to comment 94 below.</p> <p>Some minor levels of mortality of all sized trees are a normal occurrence in natural forest ecosystems, and characteristic levels of large tree mortality are</p>

Commenter	Number	Response
		<p>desired to produce key wildlife habitat elements (snags, down logs). Treatment mitigations to limit and avoid damage to desired large leave trees have been incorporated into the project design. Implementation of this project will produce forest conditions that are far more resilient than the current condition, and therefore it is highly probable that large trees will experience greater longevity as a result of this project. Under the current forest conditions, large trees are at high risk of accelerated mortality due to insects, disease and uncharacteristically severe fire.</p> <p>MIS cavity nesters (hairy woodpecker and pygmy nuthatch) habitats were analyzed for mechanical and prescribed burn treatments and addressed the importance of large tree retention being consistent with the preferred alternative. The preferred alternative would contribute the upward forest-wide trend for both hairy woodpecker and pygmy nuthatch (DEIS pages 147-149, 155-158).</p> <p>Fire can cause damage to trees and can consume much of the surface fuels. However, implementation strategies can mitigate these effects as documented in the DEIS Appendix B and Appendix B of the Fire and Fuels Specialist Report (PR 443).</p>
CBD	94	<p>The McHugh and Kolb (2003) paper was a comparison of the Dauber Prescribed Fire and the Side and Bridger-Knoll Wildfires. Summarizing the document, the Dauber prescribed Fire suggested as diameter increased, mortality decreased, but findings in the wildfires showed as diameter increased mortality increased. Treatment in the Rim Lakes Project area requires a majority of the area to have mechanical treatments completed prior to prescribed burning. In addition, the study was related to basalt (heavy clay soils), not coarse-textured sedimentary soils. Fire mortality effects are much greater on fine-textured clay soils. Also many of the sites on the referenced study were high-density prior to fire occurrence, not thinned stands.</p> <p>The DEIS addresses the expected surface, passive, and active crown fire under each plan alternative. The Fire and Fuels Specialist Report states “All prescribed burns will be conducted during conditions that allow for low severity fire effects. Low severity is defined as causing less than 25% overstory mortality and causing little or no mortality to large (>16”dbh) trees” (PR 443). Modeling completed for the draft states that “[a]s described in the modeling, high severity effects are a possible result of actions across up to 20 percent of the area. In most cases, prescribed burning would occur following mechanical treatments.</p>
CBD	95	<p>Large tree growth, development and resilience to mortality factors are best facilitated by managing for less overall forest density. Alternative B best accomplishes this as described in the DEIS (pages 33-36, 57-58). Project design criteria has been incorporated to assure maintenance of desired canopy cover within mature tree groups during implementation that meets wildlife and habitat needs.</p> <p>Red squirrel is a Management Indicator Species. Effects analysis covered approximately 8,127 acres of red squirrel habitat that occurs within the project area (DEIS Tables 69, page 133 and Table 70, page 135). The treatment in red squirrel habitats would be included within MSO Protected and Restricted habitats (not Northern goshawk treatments) that provides for existing or future mature mixed conifer forest structure that benefits red squirrel (DEIS page 162). (also see Wildlife Specialist Report (PR 441), and Addendum (PR 510).</p> <p>Effects analysis for northern goshawk found that the preferred alternative</p>

Commenter	Number	Response
		<p>would meet the northern goshawk recommendations and would move the stratified habitat towards desired conditions (DEIS, pages 115-128).</p> <p>Additionally, treatment activities within old growth and MSO protected, target/threshold, and northern goshawk habitat with slopes > 40% will have minimal change in canopy, only understory effects (DEIS, pages 98, 115-116, 162).</p>
CBD	96	<p>This is specifically addressed in the Silviculture Specialist report Appendix C. A discussion specifically links the Stand Density Index (SDI) project evaluation criteria with Forest Plan and project objectives. (PR 552)</p> <p>Current Forest Plan language does not describe the open conditions that would lie between VSS groups 1-6. It implies that 100% of a forest would be allocated to one of the VSS groups. However, historic reference conditions indicate that these forests were not closed forests with continuous tree canopies. In fact they included open areas between tree groups and individual trees described in the DEIS as grass forb shrub interspaces. Because the Forest Plans do not specifically describe these open conditions, the Rim Lakes Project includes a project level amendment to the Forest Plan, which allows for mimicking these reference conditions. In fact, creation of these open reference conditions is consistent with the Open Stand Conditions described in the LTRS proposed by CBD in these comments.</p>
CBD	97	<p>The plan amendment for the Rim lakes project insures plan consistency. The plan amendment is based upon desired conditions, largely informed by historic reference conditions. These desired conditions are well-supported by the scientific literature. (White 1985 (PR 43), Woolsey 1911 (PR 1). These desired conditions provide for tree groups of all age-classes separated by grass/forbs/shrub interspaces.</p> <p>The Forest Plan Standards for northern goshawk habitat directs that management be focused on development and maintenance of uneven-aged stand conditions. The Forest Plan Guidelines for MSO habitat recommends uneven-aged management systems as preferred to even-aged management systems. The best available science for local forest ecology demonstrates that historic natural forest conditions were uneven-aged forest stands.</p> <p>The only silvicultural cutting methodologies specifically designed to develop and maintain uneven-aged stands are group selection and single tree selection (Dictionary of Forestry, PR 131). Strict retention of trees based upon size/age and selection for removal of younger/smaller trees (thinning from below) will lead towards development of single, two-aged and dominant aged/sized forest conditions. The rate in which this age/size homogenization occurs will vary based upon the current conditions, but over time, a focus on retention of only large trees will result in homogenous forest conditions with little age/size differentiation.</p>
CBD	98	<p>See response to comment 97. A Single and two-storied stands is associated with even-aged silvicultural cutting methods in the textbook literature. Uneven-aged stands are specifically defined as having three or more distinct age classes, each representing at least 20% of the overall stand composition. In a sustainable uneven-aged stand, these ages will represent ranges from young to old.</p> <p>By definition, group selection is an uneven-aged cutting method that is focused on creation and maintenance of uneven-aged forest stand structure (Dictionary of Forestry, PR 131).</p> <p>In the relevant examples examined in alternative C (Little Springs and</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		Mineral treatment areas, found in the Silviculture Specialist Report, PR 552 and PR 553), the only option to reduce overall forest density was to remove most of the smaller, younger trees because of the cutting size limitation. Removal of all trees less than 10" still failed to reduce stand density sufficiently to meet forest health and fire hazard objectives on the Little Springs area. Both of the resulting stands exhibited much more homogenous age/size structures.
CBD	99	<p>Figure 6 in the Silviculture Report (PR 553) displays an area where an entire age class was removed because there were too many trees 16 inches and larger which were left. This restricted the ability to meet stand density objectives while leaving multiple age classes. This was an example of what happens when arbitrary diameter limits are imposed on a project.</p> <p>To reduce density to meet fuels objectives, most smaller trees must be removed to offset the retention of all trees greater than the size constraint. Figure 5 in the Silviculture Report is a more accurate display of the desired conditions for the proposed action. Notice the stand provides for wildlife cover as well as multiple age classes as compared to a two-storied stand represented by Figure 6.</p>
CBD	101	No response needed.
CBD	102	The 1996 forest plan amendment states "allocate no less than 20 percent of each forested ecosystem management area to old growth as depicted in the table". The plan also states "Seek to develop or retain old growth function on at least 20% of the naturally forested area by forest type in any landscape". Two forest types were identified in the Rim Lakes Project as below the allocated amount, mixed species and ponderosa pine. The project proposes on page 59 of the DEIS to exceed allocations found in the forest plan for old growth allocation. Mixed species allocation is 43 percent and ponderosa pine is 27% exceeding the requirements of the forest plan for old growth allocation by ecosystem management area. The old growth analysis examines old growth relevant to this project at the required three scales (see silviculture specialist report).
CBD	103	The current condition of allocated old growth for the project is below forest plan percentages as reflected by table 22 in the DEIS. Old growth allocated for the Rim Lakes project may not meet all structural attributes found in the forest plan. Management of these areas would to move them towards all structural attributes of old growth found in the forest plan. Trees 18 inches and greater would be retained except for public safety, and protection of residual stand from insect and disease.
CBD	104-106	No response needed.
CBD	107	As noted in the DEIS, seven percent of the project area is currently allocated for old growth management. One of the purposes of the project and one of the actions proposed is to bring this allocated percent in line with the Forest Plan expectations. As stated above not all structural attributes may be present in existing or allocated old growth. The forest plan strive to create or sustain old composition, structural, and functional flow as possible over multiple area scales. Seek to develop or retain old growth function on at least 20% of the naturally occurring area. The Silviculture Specialist Report recognizes that currently allocated areas do not necessarily meet old growth standards in the forest plan but are managed to move towards those conditions to meet old growth structural attributes over time.

Commenter	Number	Response
CBD	108	<p>The forest plan states that allocations will consist of landscape percentages meeting old growth conditions and not specific areas. However, the Rim Lakes project did include specific stands and their allocations in the silviculture specialist report appendices. Also other areas would also qualify as identified in figures 2 and 3 of the silviculture report as defacto areas within stands that were not counted as part of the percentage. These areas cannot be mapped but would be managed towards old growth conditions.</p> <p>“Developing old growth” has been planned for areas that are selected to be managed towards achieving the forest plan old growth criteria over time. These areas are selected based upon their existing condition and site potential to best meet the old growth criteria in the shortest time frame.</p> <p>Forest plan requires that 20% of each forest type be managed towards the described old growth conditions. Areas were identified in the project to do just that and the District-wide percentage is displayed before and after project implementation. Both action alternatives propose to do the exact same treatment within the stands allocated for OG management.</p>
CBD	109	<p>This statement presented in the comment comes from chapter 1 of the DEIS, where it is an issue statement, presenting a concern about a possible outcome of Alternative B. It is not a measurement of actual effects. This was a comment made from an interested public (CBD) during the collaboration process which resulted in the development of alternative C. The comment has equated the three indicators for this issue with indicators of the project effects to old growth. For example, 16 inch and larger trees have no relevance to the Forest Plan definitions for old growth, but are indicators relevant to this issue of large tree retention.</p>
CBD	110	<p>The project describes the effects to old growth which are found in table—comparison of alternatives—and on page 59 of the DEIS. Stands proposed for thinning would improve forest health, increase tree size growth, and reduce fire hazard for both alternatives B and C. Existing old growth is identified under the old growth analysis and is proposed to be managed to enhance the Forest Plan old growth characteristics. In mixed conifer stands desired conditions for old growth forest are based on Forest Plan, Mexican spotted owl standards/guidelines. These areas would not be managed towards Desired Conditions for other forest (e.g. ponderosa pine) and habitat areas. The comment conflates these two ideas and does not accurately portray the intention of the proposal.</p>
CBD	111	<p>See response to comment 110.</p> <p>Analysis for MSO included allocated old growth stands within protected and target/threshold habitats (DEIS pages 59, 94). Also described in the Terrestrial Biological Assessment, (PR 437), Wildlife Report (PR 441) and MIS Addendum 2012 (PR 510).</p> <p>The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (Concurrence letter, PR 444).</p> <p>See also response to 95.</p>
CBD	112	<p>Not all structural attributes are known for allocated old growth or areas mapped as existing old growth. Primary elements such as number of large trees per acre are known where as other information such as age of the trees, number of logs per acre, and canopy cover percent may not be available for</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		<p>all areas or stands. Management of these areas however targets the requirements of structural attributes of the stands or areas with a detailed prescription to manage for the structural attributes found in the forest plan.</p> <p>The analysis of old growth was completed at three scales: stand, project level, and district (Silviculture Report and appendix C, PR 553 and PR552). No old growth is degraded or removed. All existing old growth is managed towards Forest Plan criteria for OG</p>
CBD	113	<p>See responses to 107 and 108.</p> <p>It is necessary to distinguish between differing forest stratum and management objectives as the proposed treatments differ. There is a complete discussion and analysis of the OG management strategy and how it is consistent with Forest Plan in the Silviculture Specialist Report. The stands selected to be managed for OG conditions are displayed in maps found in the Silviculture Specialist Report, Appendix B3. The proposed treatments for OG stands are described in the Silviculture Specialist Report, Appendix D (PR 552).</p> <p>Tree size is not necessarily indicative of tree age. Large trees may be young, and small trees may be old (relative to biological lifespan). Most trees from 16 to 20 inches in diameter are black-barked trees that established post-European settlement. In the stands selected to be managed towards OG conditions, very few trees larger than 18" dbh will be removed.</p> <p>Protecting all old trees everywhere would not lead towards sustainable OG, especially where severe disease is threatening developing OG. In ponderosa pine stands although allowed, trees greater than 24 inches would be removed only for health and safety purposes or for ecological purposes. The project will not degrade old growth stand character. It may take a few selected old trees that are diseased in order to protect regeneration. OG is a specific patch, group or stand condition. Scattered old trees do not fit the definition of old growth.</p>
CBD	114	<p>This project was planned in strict accordance with the Forest Plan/1995 MSO Recovery Plan requirements for MSO protected and restricted habitats. The project does not propose mechanical treatments within any nest/roost core area of any of the 4 PACs within or partially within the project area. One PAC nest/roost will be exposed to broadcast burning outside of the breeding season. The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (See concurrence letter, PR 444). In addition, only 358 acres are proposed to be treated in protected habitat.</p> <p>This is a forest restoration project utilizing prescribed fire and mechanical treatments. The CBD mischaracterizes the purpose and need, particularly the mechanical treatment, as solely a logging operation.</p>
CBD	115	<p>Only one PAC (Ridge PAC) is entirely within the project area, and is the only PAC that will receive mechanical treatment. Low severity prescribed fire would occur within each of the four PAC's. This level of prescribed fire would not alter forest structure in the PAC's, but would partially consume duff, dead and down material, and any herbaceous, forb, and browse (FEIS, page 92).</p> <p>Designated critical habitat acres within a Critical Habitat Unit include only those acres defined as protected and restricted habitat in the Apache-</p>

Commenter	Number	Response
		<p>Sitgreaves Forest Plan. Other forested and non-forested vegetation types occur within the Critical Habitat Unit boundaries but are not considered designated critical habitat. The project area includes areas that do not meet the definition of critical habitat and therefore do not contain the necessary Primary Constituent Elements as defined in the Final Rule designating critical habitat for the spotted owl (USDI 2004).</p> <p>Critical habitat is defined as protected and restricted habitats which contain the primary constituent elements (PCEs) necessary for conservation of the species within the designated critical habitat units (USDI 2004). The PCEs were identified throughout the project area and include 3,886 acres out of the total acres that fall within the critical habitat boundary in the project area. Approximately 22,507 acres within the critical habitat boundary would be treated during the 15 year implementation period by low severity prescribed fire, which would not result in adverse effects (DEIS pages 98, 102).</p> <p>The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (Concurrence letter, PR 444). Consequently, the figures and conclusions cited in the comment regarding critical habitat do not reflect an accurate interpretation of the facts on the ground or the requirements.</p>
CBD	116	<p>The 2004 MSO critical habitat final rule clarified the primary constituent element descriptions to assist landowners and managers in identifying areas containing these elements. Critical habitat is defined as those areas within the mapped unit boundaries that meet the definition of protected or restricted habitat as defined in the 1995 Recovery Plan. During ESA Section 7 consultation, the analysis team identified the areas containing the PCEs and determined that the proposed action would not adversely affect designated critical habitat. The FWS concurred with this determination (Concurrence letter, PR 444).</p>
CBD	117	<p>PCE's were analyzed with a determination of MSO critical habitat being "may affect, not likely to adversely affect the Mexican spotted owl critical habitat for forest structure and prey base PCE's (DEIS, page 102). It is recognized that treatments (mechanical and broadcast burning) are expected to have a short-term insignificant impact with a long-term benefit." (DEIS page 102; Terrestrial Biological Assessment, PR 437). The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl critical habitat (Concurrence letter, PR 444).</p> <p>See also response to comment 116.</p>
CBD	118	<p>The DEIS disclosed the tradeoff between reducing fuel loading and having high input of organic soil carbon, which during a fire would be lost. The Greer Project cited in the comment is not in this project area.</p> <p>Short term effects from compaction, displacement and erosion are expected. The degree and longevity of disturbance is mitigated by implementation of Soil and Water Conservation Practices (BMPs) found within Appendix B. Mitigation of long term soil productivity is provided by retaining a minimum of 7 to 14 tons per acre of large woody debris as stated in R3 supplement to FSM2550. In mixed conifer, retention of 8 to 16 tons per acre is recommended. This level of large woody debris retention is generally within the allowable limits of fuel loading that can be left to meet restoration</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		<p>and fuel reduction needs. (2003, Brown et.al, Coarse Woody Debris: Managing Benefits and Fire Hazard in the Recovering Forest, RMRS-GTR-105).</p> <p>Monitoring of soil disturbance (Rim Lakes Monitoring Plan- PR 453 Appendix C) will determine whether the intent of R-3 soil quality guidelines are being met. There are numerous Soil and Water Conservation Measures (BMPs) in place, that when implemented, provides protection from loss of long term soil productivity due to impairment of soil function.</p>
CBD	119	<p>See response to comment 95.</p> <p>The 1995 MSO recovery plan and 1996 Forest Plan clearly state that uneven-aged management is preferred in MSO restricted habitat.</p> <p>Alternative B proposes to remove limited numbers of trees greater than 24 inches in goshawk habitat, but none in Mixed Conifer MSO restricted habitat, where the PCE of a large tree counts as MSO critical habitat.</p> <p>The summary statement from the MSO recovery plan cited in this comment has no bearing in the conditions in the project area. Uneven-aged management is focused on developing and maintaining a balance of young/mid-aged/old trees in each forest stand. As noted in the DEIS, MSO PCE on forest structure will change slightly in restricted other habitat with the development of uneven-aged stands.</p> <p>MSO PCE on protected habitats are only thinning small trees (>9" dbh), so no large trees will be removed in these habitats.</p> <p>MSO PCE on restricted target/threshold habitats will retain 150-170 BA where present, no trees > 24" dbh will be removed, and focus on treating smaller trees.</p> <p>(DEIS page 98, and Appendix A, as well as the Wildlife Specialist Report, PR 441)</p> <p>The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (Concurrence letter, PR 444).</p>
CBD	120	<p>This project was planned in strict accordance with the Forest Plan/MSO Recovery Plan requirements for MSO protected and restricted habitats. All required habitat management strategies and constraints have been incorporated into the project design and analysis, and USFWS has reviewed and concurred with the Biological Assessment.</p> <p>Consistent with these requirements; no trees greater than 9 inches diameter will be cut in MSO protected habitats, and no trees greater than 24 inches in diameter will be cut in MSO restricted habitats.</p> <p>Also consistent with the Recovery Plan, high forest density will be maintained/managed towards within all protected habitat and restricted threshold and target threshold habitat areas (150+ square feet of basal area). There are no other large tree retention strategies, or minimum density or requirements on lands outside of protected and restricted these specific habitats prescribed by the Recovery Plan or Forest Plan. See response to comment 28.</p>
CBD	121	<p>See responses to comments 27, 28, and 95. The cumulative effects of federal projects are considered in the environmental baseline for the species</p>

Commenter	Number	Response
		<p>and critical habitat. Therefore, analysis of the effects of this project does not occur in a vacuum but is considered cumulatively during the consultation process.</p> <p>A primary purpose and need for this project is to manage MSO habitat to improve long-term forest resiliency and sustainability to uncharacteristically severe disturbances such as fire, insects, disease and climatic stresses. Managing for ecologically-sustainable forest composition, structure and function is the best bet for sustaining habitat for T&E species such as MSO. The forest restoration projects listed in this comment are also working towards similar objectives; cumulatively these actions are improving long-term resilience and sustainability of MSO habitats across broad landscapes in Arizona, resulting in widespread benefits for this species.</p> <p>In addition, The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (Concurrence letter, PR 444).</p>
CBD	122	Vegetation analysis shows that the 1995 MSO Recovery plan/Forest Plan requirements for trees 18 inches in diameter and larger would be met within a short term following project implementation (DEIS pages 87-88). Very few large-tree groups would be removed, just selected single trees in limited circumstances.
CBD	123	The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (Concurrence letter, PR 444).
CBD	124	The Rim Lakes Project is being implemented under the Apache-Sitgreaves Forest Plan.
CBD	125	The Section 7 consultation process with the USFWS was finalized with a concurrence letter (PR 444). The issuance of a Biological Opinion is not applicable under the informal consultation process.
CBD	126	<p>During development of the environmental assessment for this project, informal consultation was initiated with a Biological Assessment that was developed and provided to the USFWS, which concurred with the determinations on federally listed species and their critical habitats (Terrestrial Species Biological Assessment PR 437 and PR 438) ; Concurrence letter from the USFWS PR 444). This consultation was reviewed in June 2012 and confirmed (PR 511).</p> <p>See response to comments 31-33. The BO currently in effect for the Forest Plan is the one issued on April 30, 2012 (PR 506).</p>
CBD	127	See response to comments 31-33.
CBD	128	The Forest Service has participated in the collaborative process involving population monitoring at the recovery unit level. A pilot study was funded by the Forest Service which concluded that the proposed population trend monitoring in the recovery plan was deemed impractical to implement. No further effort by the collaborative group or the Recovery Team has been proposed since. A new strategy, however, has been proposed in the revised Mexican Spotted Owl Recovery Plan (FWS 2012) in which the Forest Service is actively collaborating with the FWS to implement range-wide to assist in determining if delisting criteria have been met. The requirements

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		of these Forest Plan standards and guidelines for monitoring of range-wide population and habitat are beyond the scope of this project.
CBD	129	Information gathered regarding gross changes in owl habitat continue to be tracked and reported to the FWS in annual reports, consultations, and information reports submitted to the FWS, e.g. incident reports, BAER reports, etc.
CBD	130	<p>Pre- and post-treatment monitoring will occur in MSO protected and restricted habitat areas that are treated within the Rim Lakes Project as directed in the 1996 Forest Plan as amended (PR 250 pages 50, 53).</p> <p>Forest Plan, pg. 50, “Pre- and post-treatment monitoring should be conducted in all PACs treated for fire risk abatement (See monitoring guidelines).”</p> <p>Forest Plan, pg. 50, “Pre- and post-treatment monitoring should occur within all steep slopes [i.e. protected habitat] treated for fire risk abatement. (See monitoring guidelines)”</p> <p>Also, page 53, of Monitoring Guidelines:</p> <p>Habitat monitoring of treatment effects (pre- and post-treatment) should be done by the agency conducting the treatment.</p>
CBD	131, 132	See response to 128.
CBD	133	See response to comments 31-33.
CBD	134	See response to comments 128-130 and 31-33.
CBD	135, 136	See response to comments 31-33 and 128-130. The 2005 BO is superseded by the Apache-Sitgreaves National Forests LRMP BO dated April 30, 2012 (PR 506).
CBD	137	<p>See response to comment 31.</p> <p>Mechanical treatment of 281 acres within the Ridge PAC is in compliance with Forest Plan/Recovery Plan guidelines. Mechanical treatment would include only trees >9” dbh and no mechanical treatment would occur within the nest core habitat (DEIS, page 266).</p> <p>PACs will be treated with low severity prescribed fire, which would primarily consume surface fuels and would not alter forest structure (DEIS, page 92).</p> <p>A total of 3,886 acres within the critical habitat boundary have habitat characteristics that meet the PCE (DEIS, page 85).</p> <p>The FWS has reviewed the project in consultation with the Forest Service and has concurred with our determination that the project may affect, but is not likely to adversely affect, the Mexican spotted owl or its critical habitat (Concurrence letter, PR 444).</p>
CBD	138	<p>Site specific MSO monitoring has occurred (see response to comment 31).</p> <p>There is no “take” associated with the project. An informal consultation was completed for MSO with USFWS concurrence (concurrence letter PR 444)</p> <p>In addition, the 2005 BO has been superseded by the Apache-Sitgreaves NF Forest Plan 2012 BO (PR 506).</p>

Commenter	Number	Response
CBD	139	Site specific, project level MSO monitoring has occurred (see response to comment 31). The terms and conditions of the 2005 BO no longer apply.
CBD	140-141	See response to comment 32. In April 2012, reinitiation of consultation was completed as required by ESA § 7(a)(2). It was completed with the issuance of the April 30, 2012 BO (PR 506).
CBD	142	<p>A number of large wildfires occurred in the Southwestern Region in 2011 and 2012. The comment identified six of those fires: Wallow, Horseshoe II, Murphy Complex, Las Conchas, Whitewater Baldy Complex, and the Little Bear. The Forest Service immediately initiated emergency, expedited consultation for these fires by contacting the appropriate FWS Ecological Services field offices at the time of the emergency. The Forest Service submitted Biological Assessments (BA) evaluating the response to, and the impacts of the Forest Service emergency response on affected species and their habitats, including documentation of how the Service's (FWS) initial recommendations were implemented, for some of the above wildfires.</p> <p>Initiation of consultation for each of the emergency responses occurred on November 7, 2011, for the Wallow Fire, February, 2012, for the Las Conchas Fire, and September 18, 2012, for the Little Bear Fire. The BA for the Horseshoe II, Murphy Complex, and Whitewater Baldy Complex fires have not yet been completed and submitted to the FWS. With the exception of the Whitewater Baldy Complex Fire and the Little Bear fire, both of which occurred after the issuance of the 2012 Forest Plan Biological Opinion, the impacts associated with the emergency responses were submitted to the FWS to incorporate into the status of the species during consultation for each of the affected Forest Plans of the Southwestern Region.</p> <p>The Forest Service has submitted information to the FWS on the nature of each of the wildfires, the justification for the expedited consultation (as displayed through FWS involvement during the actual emergencies), and the impacts to threatened and endangered species and their habitat (e.g., BAER and wildfire information reports).</p> <p>Emergency Section 7 consultation and conferencing for suppression and emergency restoration (BAER) activities for the Wallow Fire on November 7, 2011. The USFWS has subsequently requested an extension due to other priorities (the Forest doesn't have a timeline for completion). So, it's important to recognize that the Forest has initiated Formal Consultation with the USFWS with BA's addressing effects analysis for MSO and its critical habitat for both the Wallow Fire suppression actions and BAER (PR 466 and PR 467).</p>
CBD	143	<p>The Wallow Fire Emergency Consultation for Wildland Fire Suppression Actions included 74 PAC's from the Apache-Sitgreaves NF that were evaluated in the BA. This formal consultation is ongoing with the USFWS.</p> <p>The Wallow West Fuels Reduction and Forest Recovery Project, located on the Alpine/Springerville Ranger Districts, had a Decision Notice and FONSI signed June 7, 2012. An informal consultation with the USFWS was initiated with concurrence on MSO and their critical habitat.</p>
CBD	144	See responses to comments 31 – 33, 128, and 130.
CBD	145	The Rim Lakes amendment does not change monitoring required by the Forest Plan. See also responses to comments 31-33 and 128-130.

Commenter	Number	Response
		Review of the spreadsheet submitted by CBD as a “classification summary” is interpreted data from an unreferenced source and does not provide a clear analysis. An analysis of the impacts of the 2011 Wallow Fire to MSO is currently ongoing with an Emergency Section 7 consultation and conferencing for suppression and emergency restoration (BAER) activities for the Wallow Fire. Also see responses to comments 142, 143.
CBD	146	See response to MSO monitoring comment 130.
CBD	147	This project includes a forest plan amendment that relates project purpose and need to the best available science for restoration treatments. The DEIS explains why the amendment is needed, and how the Forest Plan amendment will be implemented (DEIS pages 16-18, 26-29). This amendment has been analyzed, and the effects disclosed in this EIS. This project's preferred alternative (B) includes a plan amendment, which clarifies that canopy cover applies only to the VSS 4-6 groups. It does not apply across the stand (DEIS page 27). Canopy cover is not evaluated at the project effects scale because it cannot be accurately done. Application of broad-scale canopy cover/basal area crosswalks cannot be assessed at the stratum-wide average. Effects to forest density are disclosed in terms that can be accurately assessed (basal area, trees/acre, and stand density index). Canopy cover is a spatially dependent value (where the trees are located is just as important as how many trees). As such canopy cover and the effect of various alternatives cannot be adequately modeled at the project scale. However there is a clear discussion of project consistency with Forest Plan requirements. There are specific statements that the plan requirements will be met during project implementation, and there are clearly specified design criteria that demonstrate how this will be accomplished (DEIS appendix B). All PFAs would be managed to meet required percentages in VSS 4, 5, and 6. See DEIS appendix A, page 251 for details on basal area equivalents which meet the canopy cover requirements.
CBD	148	<p>Forest interspaces are not a novel concept as characterized in the comment. Interspaces are extensively documented in the published literature, and described by the body of scientific research as key components of natural forests. These key components provide for forest resiliency to unnaturally severe disturbances such as high-severity fire and insects/disease. The Forest plan is being amended to conform management practices to the best available science. The amendment does not require openings on 20 to 40 percent of the project area. 20% of the area is proposed to establish or develop existing VSS1 and 2. 20% of the area is proposed to establish/restore grass-forb-shrub interspaces. The project does not allow removal of old forest. It provides for removal of a few old diseased trees and as noted in the DEIS, is expected to be extremely rare, limited to individual scatterings of diseased trees. Shifting spacial scale for assessment of canopy cover is consistent with current best available science for natural forest conditions (PR 160, PR 196, PR 229).</p> <p>This project’s preferred alternative (B) includes a plan amendment which clarifies that canopy cover applies only to VSS 4, 5, 6 tree groups. It does not apply across the stand (DEIS, page 27).</p> <p>The recent Arizona District Court decision concerning the Jacob-Ryan Project found: “the Forest Plan is ambiguous with respect to the scale at which canopy cover and VSS are to be measured. The Forest Service’s decision to carry out these calculations at the group level is reasonable and entitled to deference. It was within the Forest Service’s discretion to choose its methodology in making its calculations, and the Forest Service explained why taking measurements at the group level is a reliable method of</p>

Commenter	Number	Response
		<p>assessing the condition of the forest.”</p> <p>There are specific statements that the plan requirements will be met during project implementation, and there are clearly specified design criteria that demonstrate how this will be accomplished (DEIS Appendix B).</p>
CBD	149	<p>The Plan amendments included in Rim Lakes project were developed from the Desired Conditions that are incorporated into the draft Apache-Sitgreaves Forest Plan Revision. The amendments were not developed from the Implementation Guide referred to in these comments. Furthermore, these Desired Conditions and related amendments are undergoing NEPA analysis and disclosure in this environmental document (EIS). Also see response to comment 30.</p>
CBD	150	<p>No response needed.</p>
CBD	151	<p>This comment describes how the Rim Lake Project is using current best available science for natural resilient forest conditions. The project purpose and need is to restore natural resilient forest conditions and characteristic frequent surface fire, in order to reduce the increasing occurrence of unnaturally severe disturbances such as severe crown fire and insect mortality.</p> <p>In addition, the restoration of natural forest interspaces are key to restoring the characteristic frequent surface fire regime, hydrologic function, grass/forb/shrub habitats, and other elements of resilient and properly-functioning forest ecosystems.</p> <p>The same areas would be treated under both alternatives B and C; therefore Alternative B would not increase logging in goshawk habitat over alternative C.</p>
CBD	152	<p>No response needed.</p>
CBD	153	<p>See response to comment 148.</p> <p>The forest plan does not identify how canopy cover is measured. It does say it is measured in VSS classes 4, 5, and 6. There is no reference to measurement of canopy cover at the stand level. See pages 57 and 58 of the forest plan (PR 250).</p> <p>The Forest Plan standard for goshawk habitats is to “manage for uneven-aged stand conditions.” Since stands are to be managed towards a balance of structural stages from VSS 1-6, you cannot average VSS 1-2-3 with the canopy cover for VSS 4-5-6. Just the sub-stand groups and patches of VSS 4-5-6 are specified to be managed for canopy minimum canopy cover densities. The proposed amendment clarifies this for the project (DEIS page 27) Three scales were used for this analysis (DEIS page 111-128).</p> <p>The plan amendment (DEIS pages 25-28) clarifies that canopy cover will not be measured at the stand scale. The DEIS discloses this amendment as being consistent with current best available science for restoration of natural, sustainable forest conditions.</p> <p>Northern goshawk was evaluated in the Wildlife Specialist Report at three scales and included in the DEIS (DEIS pages 112-115; 120-128; the Silviculture Report (PR 553), Wildlife Specialist Report (PR 441).</p>
CBD	154	<p>See response to comment 148.</p> <p>VSS classification has no defined area size. VSS is a classification of tree</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		size/age. Any specified unit area can be classified by the existing VSS.
CBD	155	No response needed.
CBD	156	<p>See response to comments 30 and 148.</p> <p>The “New Goshawk Guidelines – USDA 2007” reference was not used for analysis, standards, or guidelines.</p> <p>There is no reference in the forest plan to canopy cover being measured at the stand level. Canopy cover only applies to VSS 4, 5, and 6. The following is what applies to the measurement of canopy cover: “Canopy Cover: Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass/forb/shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3).” See pages 57 and 58 of the forest plan.</p> <p>Spacing and number of trees is irrelevant. The proposed amendment clarifies the plan requirements for this project. (DEIS pages 25-28). The amendments are proposed to utilize current best available science for forest restoration.</p> <p>The notes from the Forest Service planning meeting held in Flagstaff on November 3-5, 2006 are not relevant to the Rim Lakes project. The Game and Fish Dept. has written specific comment letters for this project that reflects their current position and interests (PR 503 and PR 545).</p>
CBD	157	<p>These comments by Arizona Game and Fish reflected their concerns at the time, but they have been key supporters of the current restoration strategy found in the desired conditions. Their current support is found in their comment letter to the DEIS (PR 545).</p> <p>The table referenced in the 1996 Forest Plan amendments intends to clarify the cover requirements. However, following the most recent science, the forest plan amendment of the Rim Lakes Project analyzes the openness created by the clarification for canopy cover measurement. (DEIS pages 25-28).</p> <p>The BA that was provided to the USFWS for informal consultation acknowledged that stratified goshawk habitat occurred within the project area. The project biologist contacted the USFWS to confirm that there was no need to re-initiate section 7 consultation based upon the plan amendment for treatments in Northern goshawk habitat. The USFWS response stated “If the proposed actions are the same and there are no additional actions that could impact MSO then there is no need to reinitiate” . (PR 511)</p> <p>Also see response to comment 30.</p>
CBD	158	The Table CBD-1 isn’t relevant because the Rim Lakes amendment clarifies the forest plan to state that canopy cover will not be applied at the stand level.
CBD	159	No response needed.
CBD	160	This comment describes how the Rim Lake Project is using current best available science for natural resilient forest conditions. The project purpose and need is to restore natural resilient forest conditions and characteristic frequent surface fire, in order to reduce the increasing occurrence of unnaturally severe disturbances such as severe crown fire and epidemic level insect mortality.

Commenter	Number	Response
		<p>In addition, the restoration of natural forest interspaces are key to restoring the characteristic frequent surface fire regime, hydrologic function, grass/forb/shrub habitats, and other elements of resilient and properly-functioning forest ecosystems.</p> <p>The resulting interspaces would be concentrated in the VSS 3 and VSS4 post settlement groups which currently represent approximately 89% of the area (DEIS page 70). This is approximately 49% above forest plan standards. The proposed action is to move some of these areas into VSS5/6 and VSS 1/2 which are currently deficit. Interspaces would not be created in groups of healthy trees that represent deficit VSS classes.</p>
CBD	161	<p>An analysis for the effects of the amendment was completed. A Report updating the Forest MIS was finalized in August, 2012 (PR 521). This Forest report was utilized to update the MIS analysis in the Rim Lakes Project (PR 520). The Rim Lakes Wildlife Specialist Report and 2012 MIS Addendum conducted an analysis of northern goshawk and MIS prey species (Wildlife and Rare Plant Specialist Report, (PR 441); Addendum to Wildlife and Rare Plants Specialist Report: Management Indicator Species, PR 520 ; and DEIS pages 111-167).</p>
CBD	162	<p>The EIS for Rim Lakes project assumes significance under NEPA with a thorough effects disclosure. The plan amendments for this project are specific and appropriate to the Rim Lakes area.</p> <p>Forest Service Manual section FSM 1926.5 addresses significance of amendments for plans being amended using the 1982 planning rule procedures. Section 1926.52 identifies that significant amendments are those that either: 1) result in “changes that would significantly alter the long-term relationship between levels of multiple-use goods and services original projected” within the planning area, or 2) result in “changes that may have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area during the planning period.” Neither of these situations occur for the Rim Lakes project, thus the amendment is a non-significant amendment</p> <p>Other projects identified in this comment are not part of the Rim Lakes analysis. Forest Plan revisions are well underway on the Kaibab, Coconino, Prescott, and the Apache-Sitgreaves NFs. These plan revisions utilize the desired conditions being applied in Rim lakes and will address the broader application of these desired conditions in Northern Arizona.</p> <p>The project analysis includes cumulative effects relevant to the scale of this project.</p>
CBD	163, 164	See responses to 161 and 162.
CBD	165	<p>During public comment for this project, one line of research was mentioned that raised concerns about the effectiveness of the northern spotted owl recommendations in reproductive success (Beier 2008 and Beier 2012). (DEIS page 139). This research conducted a test of the recommendations and concluded that reproduction of goshawks declined as forest structures in their breeding areas became increasingly similar to those described in the recommendations. These concerns have been evaluated in a response (Reynolds et al. 2012), which found the methods used by Beier to reach his conclusion were flawed. For example, Reynolds found the methods used to determine similarity to the structural conditions described in the recommendations resulted in inappropriate measures of similarity. Reynolds also concluded that insufficient monitoring and other factors contributed to</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		<p>Beier's conclusions.</p> <p>This issue has also arisen in other contexts where the scientific debate surrounded habitat needs for the goshawk, including whether the species is a habitat generalist (using both open canopy forest and closed canopy), or a specialist, requiring closed canopy only. In 2001, a Scientific Committee reviewed new information that had not been considered in the 1996 Forest Plan amendments (PR 160) and concluded no new evidence would raise a need to modify the amendments. A literature review in 2004 found similar results (PR 196).</p>
CBD	166	<p>The Allen's lappet browed bat is included in the analysis. Mitigation measures for snags appear on Appendix B of the DEIS, page 267. Existing snags are to be protected outside of landing areas. Recruitment of snags above the forest plan standards would occur as marking is completed to plan and retain 18 inch and larger trees for future snags. The forest service monitors mechanical treatments as they occur on the ground so mitigation measures are followed. The project proposes retaining as many large trees as possible while meeting fuels and forest health objectives. Table 20 displays the number of residual trees 16 inches and larger per acre retained for all alternatives. These numbers reflect what would be available for snag recruitment into the future. These numbers exceed the forest plan requirements. The DEIS discloses the affected environment (page 108) and expected effects to the species (page 129).</p>
CBD	167	<p>A Report updating the Forest MIS was finalized in August, 2012 (PR 521). This Forest report updated the 2006 MIS Report for Forest wide habitat and population trends (post Wallow Fire) for all MIS and was utilized for preparing a 2012 addendum to the 2011 MIS analysis for the Rim Lakes Project.</p> <p>A 2012 MIS Addendum was prepared and analyzed for the Rim Lakes Project to update and address forest-wide habitat trends, forest-wide population trends, and environmental consequences for the project following the Wallow Fire (PR 521); and Addendum to Wildlife and Rare Plants Specialist Report, Management Indicator Species (PR 520). These updates in the 2012 MIS addendum were incorporated into the DEIS (pages 132-167).</p> <p>Several MIS species had revised habitat and population trends with the Forest 2012 MIS Report, most notably species in late succession habitat such as Northern goshawk, Mexican spotted owl, and red squirrel. This trend changed from upward/stable to stable/declining and was primarily attributed to the amount of mixed conifer and ponderosa pine habitat burned at high/moderate fire severity during the Wallow Fire that changed late succession forested habitats to early succession habitats.</p> <p>A review of the July 2011 analysis of effects of the Rim Lakes Project was completed for each MIS and it was determined that project level effects resulted in improvements or maintenance of habitats and increased protection from adverse impacts of high severity wildland fire. The Rim Lakes Project would not alter forest wide population or habitat trends as a result of new information received in the Forest 2012 MIS Report (PR 521) and DEIS.</p>
CBD	168	<p>There are no Forest Plan guidelines for red squirrel as this species is a Management Indicator Species. Approximately 8,127 acres representative of red squirrel habitat occur within the project area (DEIS Tables 69, page 134 and Table 70, page 135). The treatment in red squirrel habitats would</p>

Commenter	Number	Response
		<p>be included within MSO Protected and Restricted habitats (not Northern goshawk treatments) that provides for existing or future mature mixed conifer forest structure that benefits red squirrel. As disclosed in the DEIS (DEIS page 162), a reduction in quality habitat as a result of alternative B would occur by mechanical thinning and broadcast burning of VSS 3 and VSS 4 trees to a more open condition. However, managing for old growth and MSO forest plan guidelines would provide higher basal area, larger trees and interlocked canopies that benefit red squirrel. Alternative C would remove more trees less than 16 inches in diameter to meet the density objectives, which would not change its habitat value. Both alternatives would not alter red squirrel “declining” forest-wide habitat trend or the “stable to declining” forestwide population trend.</p>
CBD	169	<p>See response to comment 50.</p> <p>Mistletoe management is identified as an “Other Treatment Objective” within Northern goshawk foraging areas and MSO restricted habitat (other) (DEIS, page 24). Northern goshawk PFA’s and MSO PACs and other protected habitat will not be targeted for mistletoe treatments.</p> <p>The project proposes to manage dwarf mistletoe distribution and severity such that it is present in naturally characteristic distribution and severity levels. The current conditions exceed natural distribution patterns and severity, thereby jeopardizing resilience and sustainability of uneven-aged forest conditions. Dwarf mistletoe objectives do not include eradication, only managed towards more natural conditions.</p> <p>On page 21, Appendix B, of the ROD for the 1996 Amendment of Forest Plans Arizona and New Mexico, there is a requirement to manage to decrease dwarf mistletoe. The silviculturist worked with forest pathologists to design project treatments to manage dwarf mistletoe (PR 449 and PR 553). This project is consistent with the forest plan regarding mistletoe management.</p> <p>A variety of wildlife species that occur within the project area benefit from dwarf mistletoe by both structure and food sources. Witches broom often provides a platform for nesting/resting cover for both birds and squirrels, and is a key habitat component that is identified for retention. Mistletoe berries are widely known as a food source for a variety of non-insectivorous avian species and mammals (squirrels and ungulates) that are known to occur in the project area. Northern goshawk is the only sensitive species that are believed to use mistletoe directly for a nesting platform along with its prey base using mistletoe for cover and food source. Mechanical treatments will focus management on severe infections of dwarf mistletoe (DEIS, page 116; Appendix A, page 248). Dwarf mistletoe is currently present above natural levels and will be managed towards natural variation over time with treatments while still providing habitat and food sources for wide range of wildlife species.</p> <p>During development of the environmental assessment for this project, informal consultation was initiated with a Biological Assessment that was developed and provided to the USFWS, which concurred with the determinations on federally listed species and their critical habitats (Terrestrial Species Biological Assessment PR 437; concurrence letter PR 444).</p> <p>The forest is required to analyze the project-level impacts on species that are federally listed or have been designated as Sensitive by the Southwestern Regional Forester. The forest is also required to address project effects to Management Indicator Species designated in the Apache-Sitgreaves Forest</p>

Appendix D. Response to Comments on the DEIS

Commenter	Number	Response
		Plan, to disclose unintentional take of migratory birds, and to disclose any take of bald or golden eagles. No status species (listed, sensitive, or MIS) is dependent on mistletoe as a habitat or food source. A full list of the species affected by the project, and their habitat within the project area, is found in both the Wildlife Specialists Report (PR 441) and the DEIS pages 77-192.
CBD	170	CBD will remain on the project mailing list.
CBD	172	See response to comment 157. The need for clarity is why the site-specific amendment was proposed. Analysis provided in the DEIS has displayed the effects of the amendment.
USDI Office of Environmental Compliance (OEC)	174	The DEIS disclosed that implementation of mechanical treatments within forest lands and low severity prescribed burning would have short-term adverse effects to all bird species that may breed within the project area during the breeding season (DEIS pages 171-174 and Wildlife Specialist Report—PR 441). The project has included design criteria in the action alternatives to lessen the impact, to the extent practical, for migratory birds by phased implementation and some areas of seasonal restrictions (DEIS Appendix B). The long-term benefits following project implementation for migratory bird habitat outweigh the short-term impacts to individuals. This disclosure meets the intent and Forest Service obligations under the MBTA, Executive Order 13186 (January 2001), and Memorandum of Understanding (MOU) between the U.S. Forest Service and the U.S. Fish and Wildlife Service. The implementation would be phased over 10 to 15 years throughout the entire EMA. The project area has Mexican spotted owl Protected Activity Centers as well as Northern goshawk Post Fledging Areas that have breeding season restrictions. These breeding season restriction areas will be utilized by migratory birds nesting within mixed conifer or ponderosa pine forested areas and they would not be impacted during the breeding season. By planning for phased implementation over time, the annual acreage disturbance affecting migratory birds is minimized. Long-term benefits for migratory birds will be realized from mechanical treatments and prescribed burning by managing forested habitats towards uneven age class structure and development of an understory browse and herbaceous component. Snag and dead/down log guidelines are followed as directed in the Forest Plan.
OEC	175	Migratory bird conservation is a primary emphasis in Forest Service efforts to advance species conservation within the Forest Service. Executive Order 13186 (January 2001) outlines responsibilities of federal agencies under the Migratory Bird Treaty Act and requires each federal agency whose actions have, or are likely to have, a measurable negative effect on migratory bird populations to develop a MOU with the Fish and Wildlife Service to promote the conservation of migratory bird populations. Of the responsibilities: one is to support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions. The Forest Service has entered into a MOU with the U.S. Fish and Wildlife Service in December 2008 that emphasizes four key principles. In the MOU (PR 356), “the parties mutually agree that it is important to: 1) focus on bird populations; 2) focus on habitat restoration and enhancement where actions can benefit specific ecosystems and migratory birds dependent on them; 3) recognize that actions taken to benefit some migratory bird populations may adversely affect other migratory bird populations; and 4) recognize that actions that may provide long-term benefits to migratory birds may have short-term impacts on

Commenter	Number	Response
		individual birds.” Prescribed burning is not tied to a set date but is dictated by conditions that would allow for an entry/treatment to meet our prescription objectives. A large window of opportunity needs to be available for burning activities, which includes spring/early summer. A five month window of seasonal restrictions within all the project area for thinning activities would be a social and economic impact (among others) causing the implementation phase to be carried out well beyond the target timeline. Based on the analysis, this restriction is not needed to protect migratory birds.
OEC	176	The literature searches for species to be considered within the project area were based upon District Wildlife Biologist professional knowledge, Arizona Partners In Flight Bird Conservation Plan (1999), and “Birds of Conservation Concern – 2002” list for BCR 16 (Southern Rockies/Colorado Plateau), issued by the U.S. Fish and Wildlife Service. The BCR 34 cited in the comment lies to the south and at a lower elevation than the project area. The analysis for this project used the most current list for the BCR 16.
OEC	177	No response needed.

Appendix E. DEIS Comment Letters Received

The public comment period for the Rim Lakes Forest Restoration Project Draft Environmental Impact Statement (DEIS) occurred between September 28, 2012 and November 13, 2012. This appendix provides the comment letters and email submitted during that period.

Appendix E. Comment Letters Received on the DEIS



LeRoy N. Shingoitewa
CHAIRMAN

Herman G. Honanie
VICE-CHAIRMAN

October 22, 2012

James E. Zornes, Forest Supervisor
Attention: Melissa Schroeder, Archaeologist
Apache-Sitgreaves National Forests
P.O. Box 640
Springerville, Arizona 85938-0640

Dear Supervisor Zornes,

This letter is in response to your correspondence to Dear Interested Party dated September 24, 2012, regarding a draft environmental impact statement for the Rim Lakes Forest Restoration Project on the Black Mesa District, which we were subsequently provided by Forest Archaeologist Melissa Schroeder. The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Apache-Sitgreaves National Forests. The Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites and Traditional Cultural Properties, and we consider the archaeological sites of our ancestors to be "footprints" and Traditional Cultural Properties. Therefore we appreciate the Forests' continuing solicitation of our input and your efforts to address our concerns. 2

In a letter dated August 12, 2008, the Hopi Cultural Preservation Office responded to the Forests' July 2008 correspondence on this proposed project and in a letter dated July 5, 2012 we reiterated our request that if cultural resources surveys of all areas involving ground disturbing activities including road maintenance identify prehistoric sites that will be adversely affected by project activities to be provided with copies of the survey reports and any proposed treatment plans for review and comment. 3

We have now reviewed the draft environmental impact statement and understand approximately 10% of the project area has been intensively surveyed for cultural resources but that 80% has been sample surveyed, and 4 prehistoric sites have been identified, one of which is described as a multicomponent Anasazi/Hopi artifact scatter. Please provide us with a copy of the site record of the multi-component Anasazi/Hopi artifact scatter. 4

We appreciate that if the stipulations and protection measures of Appendix J of the Programmatic Agreement are met, no adverse impacts to cultural resources are anticipated from this project. If you have any questions or need additional information, and please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you for your consideration. 5

Respectfully,


Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office

xc: Arizona State Historic Preservation Office
Dee Hines, Black Mesa Ranger District, P.O. Box 968, Overgaard, AZ 85933

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White Mountain Apache Tribe

Office of Historic Preservation

PO Box 507

Fort Apache, AZ 85926

Ph: (928) 338-3033 Fax: (928) 338-6055

To: James E. Zornes, Apache-Sitgreaves National Forest Supervisor

Date: October 9, 2012

Project: Draft EIS Rim Lakes Forest Restoration Project

.....
The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the proposed project, September 24, 2012. In regards to this, please attend to the following checked items below. 6

► ***There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.***

N/A - The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethno-historic study and interviews with Apache Elders. The tribe's ***Cultural Heritage Resource Director Mr. Ramon Riley*** may be contacted at (928) 338-3033 for further information should this become necessary.

► Please refer to the attached additional notes in regards to the proposed project:

We have received and reviewed the information regarding Apache-Sitgreaves National Forest draft Environmental Impact Statement (DEIS) for the proposed Rim Lakes Forest Restoration Project on the Black Mesa Ranger District, and we have determined the proposed action and/or “Alternative B” ***will not have an adverse effect*** on the White Mountain Apache tribe's (WMAT) historic properties and/or traditional cultural resources. Regardless, we propose any/all ground disturbing activities be monitored ***if*** there are reasons to believe that there are human remains and/or funerary objects are present, and if such remains and/or objects are encountered all project activities should cease and the proper authorities and/or ***affiliated tribe(s)*** be notified to evaluate the situation. 7

Thank you. We look forward to continued collaborations in the protection and preservation of place of cultural and historical significance.

Sincerely,

Mark T. Altaha

White Mountain Apache Tribe

Historic Preservation Office

Appendix E. Comment Letters Received on the DEIS

Hurlocker, Sandy -FS

From: Richardson, Gayle -FS on behalf of FS-comments-southwestern-apache-sitgreaves-black-mesa
Sent: Tuesday, November 06, 2012 3:32 PM
To: Hurlocker, Sandy -FS
Cc: Loewe, Victoria L -FS; Nelson, Chris A -FS
Subject: FW: Rim Lakes Forest Restoration Project

From: Wendy S. LeStarge [<mailto:LeStarge.Wendy@azdeq.gov>]
Sent: Friday, November 02, 2012 10:52 AM
To: FS-comments-southwestern-apache-sitgreaves-black-mesa
Cc: Linda C. Taunt
Subject: Rim Lakes Forest Restoration Project

The following comments are submitted on behalf of Linda Taunt, Deputy Division Director of the Arizona Department of Environmental Quality, Water Quality Division (ADEQ).

Thank you for the September 24, 2012 notice regarding the draft environmental impact statement for the Rim Lakes Forest Restoration Project, which proposes uneven-aged selective cutting of trees and broadcast burning in ponderosa pine, pine-oak, and dry mixed conifer forest stands. The proposed action would also include about 2.6 miles of temporary roads. Based on the information in the draft environmental impact statement, ADEQ has the following comments regarding water quality permits that may be required. 8

Stormwater: Construction activities (clearing, grading, or excavating) that disturb one acre or more must obtain a general permit for stormwater discharges under the Arizona Pollutant Discharge Elimination System's (AZPDES) Construction General Permit. Permit coverage is also required if the project is part of a larger common plan of development and the entire project will ultimately disturb one or more acres. As part of permit coverage, a Stormwater Pollution Prevention Plan (SWPPP) must be prepared, and implemented during the course of construction. The SWPPP must comply with ADEQ's Construction General Permit's SWPPP requirements, and must identify such elements as the project scope, anticipated acreage of land disturbance, and the best management practices that would be implemented to reduce soil erosion, and contain or minimize the pollutants that might be released to waters of the U.S. In addition to preparing the SWPPP, the project proponent must file for permit coverage before construction. 9

Clean Water Act (CWA) 401 Water Quality Certification: If project activities will occur inside the Ordinary High Water Mark of any water of the U.S., then a CWA section 404 permit (a.k.a. dredge and fill), issued by U.S. Army Corps of Engineers, may be required. If a 404 permit (or any other federal permit) is required for the project, a state-issued CWA section 401 certification of the permit may be required to ensure that the permitted activities will not result in a violation of Arizona's surface water quality standards. 10

The draft environmental impact statement is correct that Bear Canyon Lake is identified as impaired under Section 303(d) of the CWA for low pH in the 2010 Status of Water Quality in Arizona 305(b) Assessment and 303(d) Listing Report. Generally, listing as an impaired water may impact surface water quality permits, and any applicant for such permits should allow additional time for agency review. 11

Appendix E. Comment Letters Received on the DEIS

We appreciate the opportunity to review and provide comments. If you need further information, please contact Wendy LeStarge of my staff at (602) 771-4836 or via e-mail at w11@azdeq.gov, or myself at (602) 771-4416 or via e-mail at lc1@azdeq.gov.

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November 7, 2012

James Zornes
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RE: Rim Lakes Forest Restoration Project Proposed Action

Dear Mr. Zornes,

WildEarth Guardians submits these comments on behalf of its nearly 25,000 members and supporters - many in Arizona - on the Draft Environmental Impact Statement (DEIS) for the Rim Lakes Forest Restoration Project (Rim Lakes FRP). WildEarth Guardians has significant concerns that the planning area does not meet the requirements of the Healthy Forest Restoration Act (HFRA). We are also very concerned about the proposed project's impacts on Mexican spotted owl and northern goshawk, in particular the proposed non-significant Forest Plan amendments. In addition, WildEarth Guardians does not support any new road construction, temporary or otherwise. The long-term impacts of road construction are not justified by the restoration benefits and should be dropped from consideration in the final EIS.

12

Suitable Lands

Both terms, "WUI" and Condition Class 3" are legally defined.¹ The existence of certain facts must be alleged to support the assertion that these terms apply to certain lands. Therefore, the applicability of these terms to particular lands must be held to be a "legal conclusion" that proceeds from the existence of certain facts. In reference to legal issues, a reviewing court will give less deference to an agency decision than in the case of an issue of fact.

13

¹ See HFRA Sections 101(16) and 101(5) respectively.

Appendix E. Comment Letters Received on the DEIS

Lands on which hazardous fuel reduction projects may occur under the HFRA are limited to:

- I. The wildland-urban interface areas of at-risk communities;²
- II. All condition class 3 lands, as well as condition class 2 lands within fire regimes I, II or III, that are in such proximity to a municipal watershed or its feeder streams that a significant risk exists that a wildfire event will have adverse effects on the water quality of the municipal water supply or the maintenance of the system;³
- III. Where windthrow or blowdown or the existence of an epidemic of disease or insects significantly threatens ecosystems or resources;⁴
- IV. Areas that have threatened and endangered species habitat, where the natural fire regimes are important for (or where wildfire poses a threat to) the species or their habitat and the fuel reduction project will enhance protection from catastrophic wildfire (and complies with applicable guidelines in management or recovery plans).⁵

14

The draft EIS fails to provide documentation or justification supporting the suitability under HFRA or as defined in the Federal Register for each acre proposed for treatments in the planning area.⁶ The only attempt to justify the planning area as suitable per the definitions in the HFRA is in the opening summary that “for the Rim Lakes Project, lands lie in the wildland-urban interface (WUI) and contain critical habitat for the threatened Mexican spotted owl.” (DEIS at iii).

15

The Department of Agriculture defines three categories of WUI areas: interface, intermix and occluded. These are found in the Federal Register as referenced in the HFRA, Sec.101 (1)(A)(i).⁷ A WUI *interface* area is defined as a community with “3 or more structures per acre (structure is defined as a residence or business) with shared municipal services.” An alternative definition of an *interface* area is “250 or more people per square mile” (p.753). An *intermix* area is defined as an area with “structures very close together to one structure per 40 acres”. An alternative definition has a “population density of between 28-250 people per square mile” (p. 753). An *occluded* area is not relevant to the project area.

16

The Federal Register indicates a “preliminary criteria for risk evaluation and risk management that will be used by the Secretaries to rank and prioritize communities...”⁸ The Federal Register addresses this criteria through levels of risk assessment but does not

17

² HFRA Section 102(a)(1).

³ HFRA Sections 102(a)(2) and (3). HFRA defines “municipal water supply system” as “the reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, and other surface facilities and systems constructed or installed for the collection, impoundment, storage, transportation, or distribution of drinking water.” (Section 101).

⁴ HFRA Section 102(a)(4).

⁵ HFRA Section 102(a)(5).

⁶ HFRA, Section 101, (1) (A) (i) and 66 Fed. Reg. 753.

⁷ 66 Fed. Reg. 751-777.

⁸ 66 Fed. Reg. 752.

Appendix E. Comment Letters Received on the DEIS

actually rank communities at risk.⁹ The Federal Register notice also provides direction on refining the initial list of communities: “the Federal Agencies will work with Tribes, State, local governments, and other interested parties to refine and narrow the initial list of communities provided in this notice, focusing on those that are at highest risk, as determined through the application of appropriate criteria.”¹⁰ (Emphasis added).

The Federal Register also provides the “Preliminary Criteria for Project Selection.”¹¹ This section indicates that “among other factors that may be considered for project selection...will be the degree to which the community actively supports and invests in hazardous fuel reduction activities and programs....Private landowners may help reduce this (fire) risk by creating defensible space around their homes and businesses, and by using fire-resistant materials in building those structures. *Without such precautionary measures, fuel reduction on Federal land in the vicinity may be ineffective in significantly reducing community risk.*”¹² Subdivisions should implement fuel reduction on private lands *before* a Federal plan can be effective.

18

Finally, the list provided in the Federal Register is only a starting place. Based on this list, the USFS is supposed to apply the WUI criteria thus prioritize HFRA project sites.

19

The USFS may argue that it calculated site-specific fire regime current condition classes (FRCC) for the area that qualify it for HFRA authorization. First, the national FRCC rating system was not developed for localized use. The authors of the coarse-scale mapping of FRCCs stated specifically that they were meant to provide land managers with “national-level” data and for the methodology to be applied at finer scales, land managers would require “finer input data.”(Schmidt et al. 2002).

20

Nowhere in the draft EIS is the methodology or rationale for defining the planning area as suitable under the HFRA identified or explained. Failure to document and analyze suitability in the draft EIS is inconsistent with the above HFRA direction. It does not comply with the Sec.102 (A) - Authorized Projects as specified in the HFRA.

21

The HFRA, through its mandate to comply with NEPA, and by its express language, requires the Forest Service to promote encourage, and facilitate the formation of a Collaborative Wildfire Protection Plan (CWPP) by the local planning area community early in the planning process, before “key planning decisions” are made. The failure of the Forest Service to do so in the instant case must be remedied and an opportunity given for the creation of a CWPP that is allowed time to prepare an alternative to the proposed project or to contribute other forms of input that it deems appropriate.

22

The cornerstone of NEPA and the HFRA is a Congressional mandate for agency collaboration with local governments and organizations and public involvement in decision-making and implementation. In relation to the HFRA, this is borne out by its legislative history which includes the Comprehensive Strategy and 10 Year Plan. The main vehicle for satisfying this mandate within the Act is the involvement of CWPPs in the

23

⁹ 66 Fed. Reg. 753.

¹⁰ 66 Fed. Reg. 751-777.

¹¹ 66 Fed. Reg. 753 -754.

¹² 66 Fed. Reg. 752.

Appendix E. Comment Letters Received on the DEIS

decision-making and implementation process. This fact is evident from several sections in the act itself specifically providing for and encouraging the involvement of CWPPs.

NEPA requires full disclosure of pertinent information to the public and public involvement on all projects as early as possible and to the fullest extent possible. Thus, In order to comply with the spirit and intent of the HFRA and NEPA, the HFRA must be read to require the A-S FS, to the fullest extent possible, to make interested parties aware of the importance of the CWPPs to the planning process and to give the community sufficient time to form one and to propose its own plan for forest restoration.

24

There is no mention in the draft EIS of any attempt by the A-S FS to disseminate information relating to CWPPs to the public, or to encourage their formation. The draft EIS summarizes efforts to solicit public input from various groups, but does not mention CWPPs. Soliciting public input in any form is commendable, but Congress had a specific form in mind when it created the HFRA. Collaboration being a key element of the HFRA, community collaboration is a key element of a CWPP. It is one thing for the FS to assume the role of collecting individual statements of public input from various citizens or groups, but quite another for the community to get together to form its own recommendations for alternative action and present them to the Forest Service.

25

Since CWPPs are such a significant part of the HFRA's compliance with Congress' mandate to involve the public and collaborate with local agencies, the community must be informed and given an opportunity to create a CWPP at the earliest stages of the planning process. And, HFRA sec. 104(f) and the Implementation Plan must be read to require that the Forest Service "facilitate" this process. The failure to promote the formation of, and to actively integrate the involvement of a local CWPP by the Forest Service renders this project fatally flawed at present according to both the NEPA and HFRA. This can only be remedied by requiring the FS to disseminate information on the formation of a CWPP to the local community, giving the community an opportunity to create its own CWPP, and by allowing that CWPP its statutorily mandated input into the project's planning process before "key planning decisions" are made.

26

Large Trees

The HFRA requires that covered projects outside of old growth focus "largely on small diameter trees, thinning, strategic fuel breaks, and prescribed fire to modify fire behavior, as measured by the projected reduction of uncharacteristically severe wildfire effects for the forest type;" and, maximize "the retention of large trees, as appropriate for the forest type, to the extent that the large trees promote fire-resilient stands."¹³

27

Less than 3% of the trees on Forest Service lands in Arizona and New Mexico is larger than 16 inches in diameter; less than 2% is larger than 18 inches in diameter and only 0.12% is larger than 29 inches.¹⁴ Therefore, if thinning is required, the largest and oldest trees should be preserved while addressing the preponderance of small trees.

28

¹³ HFRA Section 102(f).

¹⁴ From U.S. Forest Service Forest Inventory and Analysis (FIA) data collected in 1999 under the Resource Planning Act. Compiled and reported by the Southwest Forest Alliance. http://www.swfa.org/pr_2004/Big_Tree_paper.pdf.

Appendix E. Comment Letters Received on the DEIS

All 9" dbh plus treatments in the proposed action are in direct conflict with this HFRA requirement to retain large trees as is the proposal to take trees up to and in some cases over 24". The A-S NF has stand information (RMRIS database) that could be used to statistically determine the number of large trees, greater than 9" dbh, that exist in the planning area. 29

Goshawk and Mexican Spotted Owl

WildEarth Guardians is very troubled that the Forest Service is changing its management of northern goshawk habitat from the standards and guidelines of the Apache-Sitgreaves Forest Plan (CFP). On February 23, 2007, the Forest Service completed the *Implementation Guide, Region 3, Northern Goshawk Standards and Guidelines* ("New Goshawk Guidelines" – USDA 2007), which significantly changed goshawk habitat management. We strongly disagree with any attempt to follow the new management approach to goshawk habitat and site-specific amendments to the CFP. 30

WildEarth Guardians is also concerned about the Mexican spotted owl. The Forest Service admitted to the U.S. Fish and Wildlife Service ("FWS") in an October 2008 "Annual Report" that it failed to monitor spotted owl populations as required and likely exceeded allowable incidental take. Protected Activity Centers ("PACs") were monitored for owl occupancy but not reproduction. According to the Forest Service, personnel and funding levels never were adequate to meet the monitoring requirements set out in Term and Condition 3.1 of the June 10, 2005 incidental take statement. 31

On April 17, 2009, the Forest Service requested re-initiation of formal consultation on effects of implementing the CFP on Mexican spotted owl and its critical habitat. According to that letter, "[i]t has now become apparent that the Forest Service will likely soon exceed the amount of take issued for at least one species, the Mexican spotted owl..." "it has become apparent that the Forest Service is unable to fully implement and comply with the monitoring requirements associated with the Reasonable and Prudent Measures for several species (including MSO) in the [biological opinion]." The FWS accepted the Forest Service's request and reinitiated formal consultation on the CFP and issued a new biological opinion and incidental take statement on March 30, 2012. 32

The March 30, 2012 biological opinion and incidental take statement eliminates the requirement of prior take statement to monitor Mexican spotted owl populations throughout the range of the species, and replaced it with a much more modest requirement to monitor and report take (defined as PAC management) rather than population activities and trends. Compliance with new terms and conditions in the March 30, 2012 take statement does not assure that the Forest Service's independent obligation per the Apache-Sitgreaves Forest Plan or the MSO Recovery Plan to monitor spotted owl populations. 33

Quantitative Risk Assessment

We request that the Final EIS consider a quantitative risk assessment that would clarify whether or not managing the area with mechanical thinning treatments is the best approach for risk management. Additionally, there are often severe consequences to 34

Appendix E. Comment Letters Received on the DEIS

resources associated with mechanical thinning which could be avoided with a more efficient prescribed burn program. We request that the Apache-Sitgreaves National Forest (A-S NF) consider closing or at very least resting the grazing allotments within the planning area to assure that costly fuels treatments are effective. Unless the livestock are removed from the planning area, “ecological functionality of fire [in] fire adapted ecosystems” is practically impossible and this reality must be addresses in an Final EIS. 171

It is critical that the Final EIS consider a statistically-valid risk (note that risk in this context should not be confused with hazard) of catastrophic fire as well as the required maintenance schedule and costs to keep that risk low against the impacts from logging on other non-timber resources such as wildlife viability, soil conditions and water quality. The transient effects of treatments on fuels, coupled with the patchy nature of fire, greatly limit their potential effectiveness. As a result, in the majority of treated areas, treatments will only have negative watershed effects without providing any compensatory benefits from reduced fire severity. 35

Rhodes and Baker (2008) provide a “framework for quantitatively bounding the potential effectiveness of fuel treatments and the likelihood of fire affecting untreated watersheds, based on the probability of fire and the duration of treatment effects on fuels.” For example, Rhodes and Baker (2008) estimate the probability of a moderate to high intensity fire in any given area of Southwestern ponderosa pine forests as .0025% per year, or 15% over 60 years. Such an assessment using local fire risk data is not complicated; the equations are provided in Rhodes and Baker (2008) and should be a fundamental component of the Final EIS. 36

Due to the transient effects of treatments on fuels, because of natural vegetative regrowth, treatments likely will have to be repeated over time, thereby increasing cumulative effects and fiscal commitment, which must be accounted for in an Final EIS. For instance, “the treatment of 20% of a watershed’s area twice over a twenty-year period contributes as much or more sediment delivery than treating 40% of a watershed in a single entry.” (Rhodes 2007). 37

Climate Change

With climate change rapidly affecting established paradigms, it is important that the A-S NF consider the possibility that any expensive management actions in the vegetated lands of the planning area may be excessive. Most recent uncharacteristic fires in the southwest are due more to weather conditions at the time of the fire than to fuel conditions and this fact should be recognized by the A-S NF. Regardless of expensive mechanical thinning operations, if fires occur, as they do more and more, on the edges of the “normal” fire season, when conditions are hot and windy, nothing will stop uncharacteristically large fires. 38

It is important and required that the Forest Service consider the effect of all its decisions on climate change. The Global Climate Change Prevention Act of 1990, especially sections 6701(b)5 and (c)3 requires climate change effects in decision making and alternatives that 39

Appendix E. Comment Letters Received on the DEIS

mitigate climate change.¹⁵ Forests are critical as a carbon pool in the global balance of greenhouse gasses. Most accounts tally thinning and logging as a source of carbon in the global carbon budget. Depro et al. (2008) calculated that if all timber harvest ceased on national forests, the rate of carbon storage on those lands could be increased by an average of about 30 percent over the next five decades, compared to a “business as usual” scenario, including stores in wood products.

Of course, the release of any greenhouse gasses through logging or thinning must be considered in context with competing objectives, especially in this case where reducing the potential for uncharacteristic fire is an objective. Although there are a great variety of methods and intensities included in the term thinning, “the immediate effect of all of them will be a reduction in forest carbon stores that may or may not be recovered over time” (Brown 2008, Citations omitted; Selman et al. 2008). Rarely does an entire forest area burn completely in a single event, statistically, there is a distribution of burn severities within a fire perimeter, and not all biomass is consumed in a fire resulting in a complete transfer of carbon to the atmosphere. (Deluca and Aplet 2008). Therefore, a careful comparison of the carbon released from thinning to a statistically-valid set of burn scenarios will be important to demonstrate an overall benefit in terms of the global carbon budget.

40

Cumulative Impacts

Finally, the analysis must consider cumulative impacts of other past, present, and reasonably foreseeable future actions. Cumulative impacts should be analyzed without regard to land ownership boundaries and should take into account actions of other agencies and individuals. See 40 CFR 1508.7 and Forest Service Handbook 1909.15, §15. Among the actions that should be taken into consideration as part of the cumulative impact analysis are past logging and regeneration within and near the analysis area, livestock grazing and the current condition of range in the analysis area (including specifically potential effects on regeneration), and road construction and reconstruction.

41

Past, present, and future projects must be assessed and disclosed in the analysis and should be considered at least at the level of the larger watershed(s). The planning area and surrounding areas have been heavily logged and burned in wildfires over recent decades, very little of this landscape remains unaffected. This fact should be disclosed and the effect on forests structural stages in the area disclosed.

42

¹⁵ 7 U.S.C. 701

Appendix E. Comment Letters Received on the DEIS

We request that you please consider a reasonable alternative that does not include any site-specific forest plan amendments nor contemplate any new road construction of any type. Thank you for your consideration of these comments on the Rim Lakes Forest Restoration Project DEIS.

43

Sincerely,



Bryan Bird
Wild Places Program Director

Appendix E. Comment Letters Received on the DEIS

References

- Brown 2008. The Implications of Climate Change for Conservation, Restoration, and Management of National Forest Lands. The National Forest Restoration Collaborative. 2008. Accessed October 20, 2008 at <http://ewp.uoregon.edu/pdfs/ISE-forest-mgt-mch.pdf>.
- DeLuca, T. H., and G. H. Aplet. 2008. Charcoal and carbon storage in forest soils of the Rocky Mountain West. *Frontiers in Ecology and Environment* 6.
- Depro, B.M., B.C. Murray, R.J. Alig, and A. Shanks. 2008. Public land, timber harvests, and climate mitigation: Quantifying carbon sequestration potential on U.S. public timberlands. *Forest Ecology and Management* 255: 1122–1134.
- Rhodes, J.J. and W.L. Baker. 2008. Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests. *The Open Forest Science Journal* 1: 1-7.
- Rhodes, J.J. 2007. The watershed impacts of forest treatments to reduce fuels and modify fire behavior. Pacific Rivers Council. Unpublished Report. Accessed October 20, 2008 at <http://www.pacivers.org/verityStorage/Watershed%20Impacts%20of%20Forest%20Treatments%20to%20Reduce%20Fuels%20&%20Modify%20Fire%20Behavior%5B1%5D.pdf>
- Romme et al. 2004. Historical and Modern Disturbance Regimes, Stand Structures, and Landscape Dynamics in Piñon-Juniper Vegetation of the Western U.S. Published by the Colorado Forest Restoration Institute, Colorado State University, Fort Collins, CO (www.cfri.colostate.edu), June 4, 2008.
- Schmidt, K.M., J.P. Menakis, C.C. Hardy, W.J. Hann, and D.L. Bunnell. 2002. *Development of coarse-scale spatial data for wildland fire and fuel treatment*. RMRS-GTR-87. Ft. Collins, CO. 41 pp.
- Selmants, P.C., Hart, S.C., Boyle, S.I., Gehring C.A., and B.A. Hungate. 2008. Restoration of a ponderosa pine forest increases soil CO₂ efflux more than either water or nitrogen additions. *Journal of Applied Ecology* 45: 913–920.
- USDA Forest Service. 2008. *Annual Report Covering the Period June 10, 2005 – June 10, 2007, Programmatic Biological Opinion on the Land and Resource Management Plans for the 11 National Forests in the USDA Forest Service Southwestern Region*. Albuquerque, NM. October. 110 pages.
- _____. 2007. *Implementation Guide, Region 3, Northern Goshawk Standards and Guidelines*. Southwestern Region: Albuquerque, NM.
- _____. 2006. *Final Supplement to the Final Environmental Impact Statement for Amendment of Forest Plans, Arizona and New Mexico*. Southwestern Region: Albuquerque, NM.
- _____. 1996a. *Final Environmental Impact Statement on Amendment to Forest Plans*. Southwestern Region: Albuquerque, NM.

Appendix E. Comment Letters Received on the DEIS

_____. 1996b. *Record of Decision on Amendment to Forest Plans*. Southwestern Region: Albuquerque, NM.



November 8, 2012

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The Ecological Restoration Institute (ERI) at Northern Arizona University is pleased to provide comments on the Draft Environmental Impact Statement (EIS) for the Rim Lakes Forest Restoration Project (project). We commend you on compiling a document that is well-written, concise and informative in describing the current conditions and proposed treatment effects on the Rim Lakes planning area.

44

ERI concurs with the proposal in the project analysis to select Alternative B as the preferred alternative, as it will most effectively enable accomplishing stated proposed actions as described in the Purpose and Need for Action, and in “moving” the treatment area toward the desired conditions.

We further commend the planning team on the following successful accomplishments, in regard to the development of this project;

- an extensive and thorough public involvement and collaborative planning process,
- pursuing landscape-scale restoration objectives on such a critical and important land base that is at high-risk of several destructive threats,
- conducting a HFRA pre-decisional objection process to identify and resolve potential issues and concerns,
- and, proposing timely, effective and needed actions that will, when implemented, significantly progress toward the Historic Range of Variability (HRV), reduce the potential effects of severe wildfire, improve the health and resiliency of the vegetative structure, and return managed fire to the frequent-fire ecosystems.

In our review of the project EIS, the ERI offers the following observations and suggestions for consideration:

- 1) In multiple statements in the EIS Summary, Purpose and Need for Action and document narrative, there is discussion regarding the existing conditions that are departed from historic or natural processes, that a purpose of the proposed treatments is to restore forest health by altering the present vegetative structure and restoring managed fire to the ecosystem to achieve natural processes. ERI strongly supports these stated objectives and concur that this landscape-based approach to restoring ecological functions and processes should be implemented as soon as possible. Further, ERI believes the identified scale, timeframes of treatment strategies and sequence, will move the treatment areas toward desired conditions.

45

Appendix E. Comment Letters Received on the DEIS

- 2) ERI also strongly supports the analysis of Alternative C, which documents that by limiting the cutting of trees to less than 16 inches in diameter (at breast height), will negate the option of restoring the forest health, reduce the unacceptable risk of severe wildfire, enable a multi-aged vegetative structure, or achieving the desired conditions in these ecosystems. ERI concurs that not selecting Alternative C is the appropriate action. 46
- 3) The Purpose and Need for Action in part describes the need to “move stand densities toward desired conditions that exhibit forest health, promote large tree development, and promote herbaceous understory species richness”. It further describes strategies to enhance an “uneven-aged forest structure that would reflect a distribution of age classes, with a conifer species composition that would favor shade intolerant forest species”. ERI recommends including information on age-class distribution by tree species, and the resulting acreage to be treated, will provide clarity on the transition objectives and strategies to change from current departed, to desired conditions. 47
- 4) The discussion in the General Desired Conditions section of the EIS, describes conditions that include “open grass-forb-shrub interspaces” and “canopy gaps for regeneration of small trees”. Further, in the narrative of the Proposed Action, it states the need to “Selectively cut trees to create canopy gaps for regeneration and interspaces, which are to be managed as non-forest areas”. ERI recommends utilizing language and definitions that are consistent with the proposed Southwestern Region’s Desired Condition’s descriptions that address interspaces between groups of vegetative structure, non-forest openings, and eliminating the discussion of “gaps”, to help provide clarity of objectives and actions. 48

ERI also recommends adding clarity to inform the reader whether the 20 percent allocation for interspaces, as well as 20 percent for regeneration areas, applies to mixed-conifer (dry and wet) as well as ponderosa pine (and pine-oak) treatments. Also, as the Group Selection cutting method is a proposed treatment, how does the cutting methodology (per the definition of removing Groups/patches to create a new age class) fit in with the 20 percent allocation of designating “gaps” for regeneration objectives?

ERI is also wondering about the application of only 20% allocation of interspaces in the ponderosa pine and the ability to achieve the desired post treatment condition of a basal area of 45. We feel a broader range of interspace creation should be considered and included in the document. The R-3 Desired Condition’s descriptions for PIPO have a range of up to 70%.

- 5) Further, the Purpose and Need for Action discusses management of uneven-aged stands utilizing the metric of stand density index (SDI). Understanding that SDI is a species-specific measure, this application and limited discussion in the EIS, intermixed with the discussion of average basal area, is confusing to the reader who might not be familiar with the concepts of SDI. We recommend either expanding the definition and process of utilizing SDI measure, or stay with basal area metrics as a unit of measure and description. 49

Appendix E. Comment Letters Received on the DEIS

- 6) Throughout the document (EIS) there is discussion relating to the effects of Insect, disease, and genetics on vegetative structure development, and possible consequences of action or in-action to address these issues. ERI recommends revising these discussions to include a clear objective, recommended strategy or desired outcomes of how treatments will help meet the objectives as stated in the Purpose and Need for Action and the Alternative outcomes. We also recommend adding references to support these objectives (forest plan direction and/or general FS policy and direction). 50
- 7) Alternative B- Summary identifies the intent to exclude re-entry maintenance burns in dry mixed-conifer within the scope of this EIS. It would be helpful to explain this reasoning and if the intent is to analyze re-entry burn treatments in a different analysis. 51
- 8) The discussion in Alternative B-Mechanical Treatments, briefly defines three proposed treatment methods (Group Selection, Irregular-density Thinning and Intermediate Treatment) by utilizing mechanical options. ERI recommends expanding this discussion to inform the reader how the proposed treatments in Alternative B, including the role of fire in these frequent-fire ecosystems, will “move” the treatment area towards meeting “Restoration” objectives. It is not apparent how these proposed treatments potentially utilize information, or science, reflecting HRV or reference condition data collected from, or pertaining to, the treatment sites. 52
- 9) The narrative outlining the proposal of re-introducing frequent fire within the historical interval of 3-5 years is strongly supported by science and site data. ERI commends the planning team for the described approach of implementing fire in designated areas, and also coupled with mechanical treatments, to help achieve the stated objectives in the planning area. 53

In reviewing the list of references cited and utilized throughout the EIS, it is apparent that the Planning Team initiated a comprehensive effort to analyze data and develop alternatives based on the best-science available. Again, ERI commends the Team on a thorough approach to address potential issues and obvious opportunities to restore the treatment areas to a more resilient, healthy and sustainable condition. 54



Bruce Greco
Ecological Restoration Institute
Northern Arizona University

Appendix E. Comment Letters Received on the DEIS



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November 9, 2012

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RE: Draft Environmental Impact Statement for the Rim Lakes Forest Restoration Project

Dear Dee,

The Arizona Game and Fish Department (Department) appreciates the opportunity to provide input on the Draft Environmental Impact Statement for the Rim Lakes Forest Restoration Project (DEIS) dated September, 2012. Restoration of Arizona's forests is of paramount importance, and the Department strongly supports the Forest Service's efforts to restore forest conditions that protect Arizona's communities, watersheds, and wildlife habitats. The Department recognizes the vulnerability of the Rim Lakes area to a catastrophic fire event, the great need to restore wildlife habitat within the project area, and acknowledges that time is of the essence. 55

The Department further appreciates the early and ongoing efforts by the Black Mesa Ranger District (District) to work collaboratively with the Department and others, including the White Mountain Stewardship Multi-Party Monitoring Board, the Natural Resources Working Group, and more recently, the 4FRI Stakeholders Group. Particularly, the recent visits in July and August of 2012 to the project area by these groups and District personnel provided a venue for constructive discussions, exchanges of ideas, better understanding of wildlife related forest restoration objectives and potential treatments, and the finding of common ground. Such effort by the District at collaboration is a model for future projects and should continue into the implementation and monitoring phases of the Rim Lakes Forest Restoration Project. 56

The DEIS disclosed the effects of a proposal to treat vegetation in a 33,500-acres project area on the Black Mesa Ranger District within the Apache-Sitgreaves National Forests. Two action alternatives (alternative B and alternative C) were analyzed along with the no action alternative (alternative A). The proposed action (alternative B) would selectively cut trees and then broadcast burn on approximately 23,615 acres. Alternative C is identical to alternative B in location and treatment, except that alternative C includes a diameter size limit so that only trees less than 16 inches diameter at breast height (dbh) would be included in the cutting and removal. 57

Appendix E. Comment Letters Received on the DEIS

The Department supports forest restoration projects that emphasize the removal of small-diameter ponderosa pine trees, which have grown over the past century to unsustainable densities, resulting not only in a profound risk of catastrophic wildfire, but also in significantly degraded wildlife habitats. Within the project area, there is also a deficit of older and larger-diameter trees and the habitat components which such trees provide. Retention of pre-settlement trees is also an essential objective of a forest restoration project. Cutting of pre-settlement trees should be avoided except in rare cases where human safety is at risk or where removal of the tree is necessary to avoid further habitat degradation. 58

That having been said, the Department does not support project-wide caps or limits on the diameter of trees to be cut. The Department recognizes that there are instances, such as those identified in the collaboratively developed 4FRI stakeholders Large Tree Retention Strategy, where young large trees need to be cut in order to achieve restoration objectives. Alternative C, with a 16 inch dbh cutting limit, would restrict the ability of the Forest to more fully restore important wildlife habitats within the project area. 59

Below are additional specific comments on the DEIS.

- Avoid even aged management at the tree group level (VSS 3-6). When treating within VSS categories 3-6, strive to maintain maximum diversity of tree size/age classes. 60
- Meadow and riparian enhancement are important components of this restoration project. The Department acknowledges that where necessary to achieve meadow and riparian restoration objectives, large post-settlement conifers should be removed. 61
- The Department strongly supports efforts to retain and increase the vigor and diversity of tree species such as oak, aspen, and maple. Healthy, productive populations of Gambel's oak are essential for many wildlife including MSO, bears, turkey, songbirds, and bats. Aspen stands harbor higher wildlife species diversity relative to surrounding conifer forests. Stands of maple, which are relatively rare within the Sitgreaves National Forest, provide similar wildlife benefits and should be favored during project implementation similarly to the small inclusions of aspen stands. 62
- The DEIS discusses tree characteristics considered when choosing leave-trees. Trees with "nondesirable characteristics" or "poor formed" trees are identified as trees that should rarely be designated as leave-trees. Although historic high grade cutting within the project area may have resulted in a higher proportion of ponderosa pine trees with undesirable qualities from a timber production standpoint, these trees did exist on the landscape historically and do add to wildlife habitat diversity, providing important habitat components. Especially within VSS 4-6 tree groups, the benefits that such trees provide to wildlife should be considered when deciding whether to retain or cut. 63

Again, the Department fully supports forest restoration in general and the Rim Lakes Forest Restoration Project in particular. We urge the District to continue to work collaboratively with the Department as well as other stakeholders throughout the implementation and monitoring 64

Appendix E. Comment Letters Received on the DEIS

Arizona Game and Fish Department
DEIS Rim Lakes Forest Restoration Project

11/9/2012
Page 3

phases of this project. If you have any questions or need further clarification, please do not hesitate to contact me at 928-367-4281 or ddorum@azgfd.gov.

Sincerely,



David Dorum
Habitat Program Manager, Region I

cc Jon Cooley, Region I Supervisor
Laura Canaca, Projects Evaluation Program Supervisor

Sent electronically

Appendix E. Comment Letters Received on the DEIS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

November 13, 2012

Mr. David Maurer
Acting District Ranger
Black Mesa Ranger District
P.O. Box 968
Overgaard, Arizona 85933

Subject: Draft Environmental Impact Statement for the Rim Lakes Forest Restoration Project, Coconino County, Arizona (CEQ# 20120307)

Dear Mr. Maurer:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Rim Lakes Forest Restoration Project pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. 65

The EPA commends the Forest Service for the commitment demonstrated in the Rim Lakes Forest Restoration Project (Project) to restore ponderosa pine and mixed conifer forests on approximately 33,600 acres within Apache-Sitgreaves National Forests. We strongly support the restoration goals for this Project, as well as those developed for the broader Four Forest Restoration Initiative, the landscape-scale planning effort to restore 2.4 million acres of forest lands in northern Arizona. 66

Based on our review of the DEIS, we have rated the preferred alternative and the document as LO-1, Lack of Objections – Adequate (see enclosed EPA Rating Definitions). The EPA acknowledges the need for the use of mechanical thinning and broadcast burning to achieve long-term restoration objectives. We commend the Forest Service for committing, in the preferred alternative, to strong best management practices and soil and water conservation practices to protect sensitive resources during mechanical harvest and fire treatments. 67

We recognize the challenge the Forest Service faces by implementing a restoration plan that will rely heavily on broadcast burning. The potential impacts to human health from the smoke produced from prescribed burning is stated in the DEIS as one of the major concerns raised by the public during scoping—a concern likely to be realized for the residents of Heber/Overgaard and Forest Lakes, communities whose prospects of receiving smoke impacts from Project prescribed fire are described in the DEIS as “almost inevitable.” Additionally, three active fuel treatment projects are adjacent to, or in close proximity of, the Project area. We recommend that the Final EIS identify specific BMPs and a strategy for working with the interagency Smoke Management Group to reduce emissions from prescribed burns and wildfires to the greatest possible extent. 68

We also recommend that the Forest Service provide additional information, in the FEIS, about the effects of climate change on the Project. The DEIS describes that, when completed, the preferred alternative will improve tree resilience, and thus, the ability of the forests to better adapt to climate change. But the DEIS does not describe how the potential effects of climate change, including warmer temperatures, reduced precipitation, and species migration, among other impacts, may affect the 69

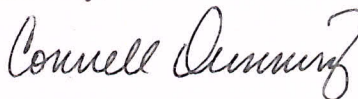
Appendix E. Comment Letters Received on the DEIS

Project's restoration efforts. We recommend that the Project's adaptive management plan include a commitment to monitor, mitigate, and respond to, the effects of climate change throughout the life of the Project.

Please note that, as of October 1, 2012, EPA Headquarters no longer accepts paper copies or CDs of EISs for official filing purposes. Submissions must be made through the EPA's new electronic EIS submittal tool: *e-NEPA*. To begin using *e-NEPA*, you must first register with the EPA's electronic reporting site - https://cdx.epa.gov/epa_home.asp. Electronic submission does not change requirements for distribution of EISs for public review and comment, and lead agencies should still provide one hard copy of each Draft and Final EIS released for public circulation to the EPA Region 9 office in San Francisco (Mail Code: CED-2). 70

We appreciate the opportunity to review this DEIS, and are available to discuss our comments. If you have any questions, please contact me at 415-972-3521, or contact Jason Gerdes, the lead reviewer for this project. Jason can be reached at 415-947-4221 or gerdes.jason@epa.gov. 71

Sincerely,



For

Kathleen Martyn Goforth, Manager
Environmental Review Office

Enclosure: Summary of the EPA Rating System

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

Appendix E. Comment Letters Received on the DEIS



CENTER for BIOLOGICAL DIVERSITY

Because life is good.

Via Web

November 13, 2012

Dee Hines
Black Mesa District Ranger
P.O. Box 968
Overgaard, AZ 85933
Email: comments-southwestern-apache-sitgreaves-black-mesa@fs.fed.us

RE: Rim Lakes Project Draft Environmental Impact Statement

This letter supplies comment from the Center for Biological Diversity (“Center”) on the draft environmental impact statement (“DEIS”) for the Rim Lakes Forest Restoration Project (“project”). On April 30, 2012, the Center commented in response to the notice of intent (“NOI”). 77 Fed. Reg. 18997-99 (March 29, 2012). On October 11, 2011, the Center objected to the preferred alternative in the August 2011 environmental assessment (“EA”).

72

To date, analysis for this proposed action was documented in an environmental assessment that underwent an objection period in September 2011. After reviewing objections, the Apache-Sitgreaves National Forests supervisor elected to document the analysis in an environmental impact statement (EIS). The forest supervisor also elected to include an amendment to the forest plan as part of the proposed action in order to achieve project restoration objectives and to assure consistency with the “Apache-Sitgreaves National Forests Land and Resource Management Plan.”

73

DEIS at *iii* (summary). The EA drew only one objection.¹ The DEIS responds to that objection and supplements the administrative record preceding the NOI. The Center incorporates its objection here by reference.

Alternatives

The Forest Service claims Healthy Forest Restoration Act (“HFRA”) authority for the project. 77 Fed. Reg. 18997 (March 29, 2012); *also see* DEIS at *iii* (“The Rim Lakes Forest Restoration Project is authorized under the Healthy Forest Restoration Act (HFRA) of 2003”). HFRA requires compliance with the National Environmental Policy Act (“NEPA”). 16 U.S.C. § 6514; 42 U.S.C. 4321.

74

Informed study of alternatives allows comparison of significant issues and provides the decision-maker and the public with a choice of action. 40 C.F.R. § 1502.14. “The existence of a

¹ The Center filed the only objection to the preferred alternative in the September 2011 Rim Lakes EA.

75

Appendix E. Comment Letters Received on the DEIS

viable but unexamined alternative renders an environmental impact statement inadequate.” *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005); also see *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988) (alternatives required where unresolved conflicts regarding proper use of resources exist). Agencies cannot define a purpose and need so slender that reasonable alternatives are excluded. *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997); also see *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997) (“One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose and need so slender as to define competing reasonable alternatives out of consideration (and even out of existence)”). “The court begins by determining whether or not the Purpose and Need Statement was reasonable.” *Westlands Water Dist. v. U.S. Dept. of Interior*, 376 F.3d 853, 865 (9th Cir. 2004). The inquiry asks if “selection and discussion of alternatives fosters informed decision-making and informed public participation.” *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982).

HFRA authorizes the Forest Service to limit alternatives to:

- The proposed agency action.
- No action.
- An alternative that:
 - Is proposed by the public “during scoping or the collaborative process,” and
 - Meets the purpose and need for action.

76

16 U.S.C. § 6514. In the 2011 EA, the Forest Service studied its proposed action, an alternative of no-action, and “Alternative C,” which would limit tree cutting to less than 16-inches diameter, because the Center proposed it in scoping. See EA at 16 (attributing “large tree” issue to public comment); 23 (“Alternative C responds to issue 1”).

The NOI reopened scoping on the project. 77 Fed. Reg. 18997 (March 29, 2012). The Center responded on April 30, 2012, “The Rim Lakes Project area currently hosts an excessively high density of roads,” and, “The Forest Service is aware that current road densities in the project area exceed forest plan standards.” The Center had made the same comment before.

77

New road construction and opening 185 miles of closed (“Level 1”) roads may cause significant cumulative effects to watershed functions and wildlife habitat. The Center asked the Forest Service to study an action alternative that would meet the purpose and need by focusing vegetation treatments “around existing open roads.” The project area has 283 miles of road. DEIS at 194 (Table 79). Road density in the project area is extreme. *Id.* 194-195 (Table 80).

The Forest Service states in the DEIS on page v (summary), “Although several issues were raised during this scoping period—in particular the human health effects of smoke from prescribed burning—none rose to the level of a significant issue and, therefore, no new alternatives were developed in detail (see page 31 for how a “no burn” alternative was considered).” The DEIS does not acknowledge cumulative effects as a significant issue, let alone consider an alternative that would forego new road construction. See DEIS at 30-32 (alternatives considered but eliminated). An alternative that would obey Forest Plan standards for road density is reasonable. The Forest Service admits that the two action alternatives studied

78

Appendix E. Comment Letters Received on the DEIS

in detail would impact soil and watershed resources the same. *See id.* at 200 (impact to soils); 202 (water quality); 206 (riparian/stream condition); 207 (“both alternatives B and C were relatively equal in cumulative effects”); 233-236 (engineering and transport).

The DEIS tells two different stories about scoping and alternatives. Above, it states, “Scoping for development of this environmental impact statement began with publication of a notice of intent in the Federal Register on March 29, 2012.” DEIS at v (summary). Elsewhere, it states that scoping began in 2008:

79

As a result of public comment in 2008 and additional analysis, the proposed action was modified as allowed by 36 CFR 220.7(b)(2)(iii), which states that “the description of the proposal and alternative(s) may include a brief description of modifications and incremental design features developed through the analysis process to develop the range of alternatives considered.” See Project Record 84, pages 16-17 for the list of modifications.

DEIS at 15. Either way, the Forest Service takes credit for accepting public comment, and associates the project with the Four Forest Restoration Initiative (“4FRI”). *Id.* at 12. Collaboration with the 4FRI stakeholders on the Rim Lakes Project apparently preceded certain field trips held earlier this year.

80

The Forest Service wants credit for collaboration under 4FRI, but refuses to consider reasonable alternatives as collaboration demands. The 4FRI stakeholders collaboratively developed a Large Tree Retention Strategy (“LTRS”) that does not rely on a strict diameter-limit to address the significant issue of large trees.² The LTSR is an “agreement-based outcome and product” recognizing that “translation of such agreement greatly enhances chances for success, and reduces the risk of conflict,” and it defines the “social license” for ecological restoration requested by the Southwestern Regional Forester. Nonetheless, the Forest Service ignores this reasonable alternative even though it meets the purpose and need, and responds to the large tree issue differently from Alternatives B and C.

The LTSR is especially relevant to the Rim Lakes Project. The Forest Service has repeatedly stated that 4FRI implementation funds may be spent here.³ “Collaboration with the 4FRI collaborative group most recently included two field trips to discuss the alternatives and view sample marking prescriptions on July 23 and August 2, 2012.” DEIS at 12.

81

82

The LTSR on page 4 identifies “The Path Forward” as a “foundational document of the 4FRI.”⁴ According to The Path Forward,

² The March 11, 2011 “Old Growth Protection and Large Tree Retention Strategy” for the 4FRI is attached to this letter for convenience. Stakeholders finalized the LTSR too late for it to have reasonably been considered by the Forest Service as an action alternative in the 2011 Rim Lakes EA. However, the public proposed it, and the agency possessed it, long before the NOI re-opened scoping on the project.

³ See attached spreadsheet “4fri_projects_1_3_12.xlsx” created by the Forest Service describing the Rim Lakes Project among many that the agency considers to be eligible for 4FRI implementation funds.

⁴ The March 24, 2010 “The Path Forward” document is attached to this letter for convenience.

Appendix E. Comment Letters Received on the DEIS

The group has agreed to a large tree retention strategy that is not based on a strict diameter cap. Large trees in the ponderosa pine forest type, defined by the socio-political process as those greater than 16" diameter at breast height (>16" dbh), shall be retained throughout the 4FRI landscape except as described below. Large trees may be cut/removed: 1) as necessary to meet community protection and public safety goals within the Community Protection Management Areas identified in the *Analysis of Small Diameter Wood Supply in Northern Arizona* and where stakeholder agreement identifies priority areas within approved [Community Wildfire Protection Plans – "CWPPs"]; or 2) when best available science and stakeholder agreement (as defined in the 4FRI Charter) identify sites where ecological restoration and biodiversity objectives cannot otherwise be met – specifically wet meadows, seeps, springs, riparian areas, encroached grasslands, aspen groves or oak stands, within-stand openings, and heavily stocked stands with high basal area generated by a preponderance of large, young trees. As part of broader research efforts, the ecological and social aspects of this large tree retention strategy coupled with limited site-specific removal needs will be examined during the development of the Proposed Action and the site-specific NEPA analysis and through stakeholder-guided research.

The Path Forward at 4 (emph. added). Both the LTRS and The Path Forward provide for removal of large trees >16-inches diameter in forest restoration treatments to create "within-stand openings," reduce density of "heavily stocked stands with high basal area," and address other site-specific needs for vegetation treatment that maintain or restore uneven-aged forest structure. The LTRS is particularly specific in "identifying circumstances, ecological objectives and selection criteria for instances in which large post-settlement trees may be cut to meet restoration objectives," and it proposes a procedure for "collaborative discussion and planning that we hope will bolster restoration efforts by increasing confidence and knowledge-sharing, maximizing agreement and minimizing disagreement" regarding the uniquely complex and challenging "exception category" of "Heavily Stocked Stands with High Basal Area Generated by a Preponderance of Large Young Trees" ("LYT"). LTRS at 9. It acknowledges that "In stands where pre-settlement evidences, restoration objectives, community protection, or other ecological objectives indicate much lower tree density and [basal area – "BA"] would be desirable, large post-settlement pines may need to be removed to achieve post-treatment conditions consistent with a desired restoration trajectory," and it outlines "Ecological Objectives" that inform large tree removal in those site-specific contexts.⁵ *Id.* at 24. Those objectives are consistent with the purpose and need for the project. *See* DEIS at 3-6. 82

To promote "Within-Stand Openings," the LTRS provides that "Large (>16" dbh) post-settlement ponderosa pine trees may be removed to restore the unique biophysical attributes of within stand openings according to these criteria," including "(2) Where desired openings are tentatively identified as ≥ 0.05 acre..." LTRS at 23. Those provisions contrast sharply with 83

⁵ The three Ecological Objectives informing removal of large trees >16-inches diameter in the LYT category include: (1) "Restore natural heterogeneity of forest, savannah and grasslands at the landscape scale"; (2) "Restore natural heterogeneity within stands"; and (3) "Break up canopy fuel continuity to reduce the probability of torching and crowning [fire behavior] and restore herbaceous fuel continuity to carry surface fire." LTRS at 24.

Appendix E. Comment Letters Received on the DEIS

Alternative B, which would amend the Forest Plan to remove the existing prohibition on created openings larger than four acres in northern goshawk habitat. *See* DEIS at 28. An alternative based on the LTRS could address the “desired condition” for more extensive openings in the project area, but would do so differently from Alternatives B and C. This would afford the decision-maker and the public a basis to compare effects on forest vegetation (uneven-aged structure) and wildlife habitat (canopy cover), and it would not require any plan amendment.

The 4FRI collaborative process offers the Forest Service an unprecedented opportunity to accelerate implementation of landscape-scale ecological restoration supported by broad social agreement. The agency emphasizes the importance of social license in its proposal to authorize 4FRI as a Collaborative Forest Landscape Restoration Project (“CFLRP”), stating:

84

The 4 Forest Restoration Initiative (4FRI) is an outgrowth of nearly a decade of collaborative efforts and analyses focused on accelerating forest restoration in northern Arizona. The central theme of these activities has been the broadly-recognized need to accelerate forest restoration and to shift restoration and management efforts from a short term, project-by-project basis to an integrated, landscape-scale program. After years of gridlock, resulting from intense disagreement over the direction of forest management, there is now an opportunity to move forward with accelerated, landscape-scale restoration at an unprecedented pace and scale. The current social support for landscape-scale restoration in northern Arizona presents an historic opportunity that should be recognized and acted upon immediately.

CFLRP 4FRI Proposal at 2. Given the enormous commitment of stakeholder time and energy to collaborative development of the Large Tree Retention Strategy and Forest Service emphasis on “agreement-based” outcomes in forest restoration, it is entirely reasonable for the agency to study and describe it as an alternative in the Rim Lakes Project. Its omission from the DEIS is noticeable to all stakeholders.

85

A Memorandum of Understanding (“MOU”) between the Forest Service and the 4FRI Stakeholders, including the Center, describes the agency’s role in the planning process.⁶

A. Work directly with parties at all phases of the NEPA process, seeking their input and agreement on: the purpose and needs statement, alternatives, collection and use of data, regarding mitigation of environmental impacts (CEQ Handbook, p. 13);

B. Strive to accommodate the agreement-based outcomes and products of the collaborative process within 4FRI, recognizing that translation of such agreement greatly enhances chances for success, and reduces the risk of conflict;

C. Establish long term restoration strategies to ensure that restoration is comprehensive, science-based, consistent, and coordinated between successive landscape-scale restoration projects; and

⁶ The February 22, 2011 “Memorandum of Understanding Between the 4 Forest Restoration Initiative (4FRI) Collaborative Stakeholder Group Representatives and the U.S. Forest Service Apache-Sitgreaves, Coconino, Kaibab and Tonto National Forests” (FS Agreement No. 10-MU-11031600) is attached to this letter for convenience.

Appendix E. Comment Letters Received on the DEIS

D. Develop and/or maintain long-term contracts and or agreements that support appropriately-scaled industry involvement.

MOU at 4. It further explains the agreed-upon expectations of agency-community collaboration in the NEPA process for 4FRI projects:

The U.S. Forest Service and the 4FRI Collaborative will work together through all phases of the NEPA process potentially including the framing of the issues, the development of a range of reasonable alternatives, the analysis of impacts, and the identification of the preferred alternative up to, but not including, the agency's final decisions made by the relevant Line Officer (CEQ Handbook, p. 13);

Id. at 4 (emph. added). Unfortunately, the Forest Service appears to want 4FRI money to implement the Rim Lakes Project without observing the agreements and procedures it agreed with the stakeholders. The agency clearly has not worked with the Center or anyone else to frame the purpose and need for action or the range of alternatives. Collaboration and the LTRS are mere after-thoughts in the Forest Service's single-minded push to create "desired conditions" in the project area that are inconsistent with the Forest Plan, and in all likelihood will miss the historic opportunity to do large-scale restoration treatments without controversy or gridlock.

86

The Forest Service has not "facilitated collaboration" on the project. 16 U.S.C. § 6514(f). Meaningful public participation includes issue definition, site selection, treatment prioritization and resource allocation by collaborating stakeholders. The collaboration required by HFRA must extend beyond insular meetings of the Forest Service interdisciplinary team and public comments on proposed actions and impact statements.

87

Large tree conservation, as outlined in the LTRS, is a reasonable alternative for the Rim Lakes Project because it:

- Meets the purpose and need of fire hazard reduction more effectively than the proposed action (Alternative B).
- Promotes recovery of old growth forest structure and function, which is currently deficient in the project area, by avoiding adverse cumulative impacts that result from large tree removal.
- Mitigates short-term adverse impacts to sensitive wildlife that would result from creation of large forest openings and significantly reduced canopy cover under Alternative B.

88

Each of the above points is explained *infra*:

- (1) Large tree conservation meets the purpose and need

89

Management of the arrangement and volume of surface fuels and small trees that connect surface fuels vertically with canopy fuels is effective at minimizing potential fire intensity (Graham et al. 2004, Graham et al. 1999). Some advocates have asserted that removing large

trees reduces canopy bulk density and lessens fire resistance-to-control in extreme weather (Abella et al. 2006). However, to assess fuel treatment effects on the likelihood of canopy fire initiation and spread (i.e., passive and active crown fire) the analysis must also consider (1) surface fuel loading and arrangement, (2) canopy base height and (3) local topography (Graham et al. 2004, Hunter et al. 2007, Van Wagner 1977). The DEIS ignores these factors. The former two factors can be actively managed in ponderosa pine and mixed conifer forests to significantly decrease the likelihood of crown fire initiation and spread without resort to large tree removal (Fielder and Keegan 2002, Omi and Martinson 2002, Perry et al. 2004, Pollet and Omi 2002).

Research demonstrates no advantage in fire hazard mitigation after thinning treatments remove trees in all size classes compared to treatments that retained trees larger than 16-inches diameter. Treatments simulated with the same Forest Vegetation Simulator software applied in this project analysis that only removed trees smaller than 16-inches diameter were more effective at reducing long-term fire hazard than comprehensive treatments (Fiedler and Keegan 2002). Thinning small trees and pruning branches of large trees to increase their crown base height significantly decreased the likelihood of canopy fire initiation and crowning behavior (Graham et al. 2004, Perry et al. 2004). Low thinning and underburning to reduce surface fuels and increase canopy base height at strategic locations effectively reduces fire hazard at a landscape scale and meet the purpose and need for action (Finney 2001).

90

Conservation of large trees is fundamentally important to restoration of fire-adapted forest ecosystems and meeting the purpose and need (Brown et al. 2004, DellaSala et al. 2004). Large ponderosa pine and Douglas-fir trees possess autecological characteristics such as relatively thick bark and insulated buds that promote resistance to heat injury (Arno 2000, Weaver 1951). Self-pruning mature ponderosa pines feature high branch structure and open canopies, which discourage torching behavior (Keeley and Zedler 1998). Finally, mature ponderosa pines have a high capacity to survive and recover from crown scorch (McCune 1988). Thus, the existence of large tree structure enhances forest ecosystem resilience to wildland fire (Arno 2000, Pollett and Omi 2002), whereas removing them undermines resilience (Brown et al. 2004).

91

(2) Large tree conservation avoids significant cumulative effects

Large trees are the most difficult of all elements of forest structure to replace once they are removed (Agee and Skinner 2005). Further, large trees are not particularly abundant at any spatial scale in the Southwestern Region (USDA 1999, 2007a; USDI 1995). The ecological significance of old-growth forests and large trees is amply documented, whereas a scientific basis for logging large trees for purposes of fuel reduction or forest restoration is lacking (Allen et al. 2002, Friederici 2003, Kaufmann et al. 1992). Large tree removal is not necessary or beneficial to restoration of fire-adapted forests (Falk et al. 2006), but their conservation is centrally important to restoration (Brown et al. 2004, DellaSala et al. 2004).

92

In addition to their general rarity within the project area and across the landscape, a variety of factors other than logging threatens the persistence of remaining large trees in southwestern conifer forests. Prescribed fire treatments can injure exposed tree roots that have migrated into accumulated duff layers and cause high levels of post-treatment mortality among

93

large trees (Sackett et al. 1996). Burning of pine stands with high surface fuel loading also can produce high fireline intensities and result in large tree mortality due to cambial injury by heat (Hunter et al. 2007). Prescribed fire treatments also may render large trees susceptible to delayed bark beetle infestation (Wallin et al. 2003). In addition, large tree mortality has indirectly resulted from mechanical thinning activities (Hunter et al. 2007). Large snags and downed logs that supply critical habitat for primary and secondary cavity-nesting species also may be destroyed by fuel treatments (Hunter et al. 2007). Prescribed fire may create new coarse woody structure by killing live trees, but any gain in new snags or downed logs as a result of fire treatments generally does not offset their loss, as existing coarse wood is irretrievably lost (Randall-Parker and Miller 2002).

McHugh and Kolb (2003) describe unplanned and prescribed fire effects on ponderosa pine forest structure in northern Arizona reflecting a “U-shaped” tree mortality curve in which mortality was lowest among trees sized 30 – 60 centimeters (“cm”) (approx. 12” – 24”) diameter, and highest among the smallest trees as well as in the 75 – 80 cm (~29.5” – 31.5”) diameter (Figure 3). Resistance to fire-induced mortality was greatest among trees sized 35 – 75 cm diameter. Mortality effects occurred despite relatively uniform “crown damage” across tree size classes, indicating that cambial injury and root scorch fire effects were most significant among the smallest and largest trees, whereas intermediate-sized trees were relatively uninjured and may have benefited from the disturbance (McHugh and Kolb 2003). The large tree conservation alternative would best maintain trees that are most likely to survive fire injury and supply recruitment structure that will support deficient old growth forest structure in the future.

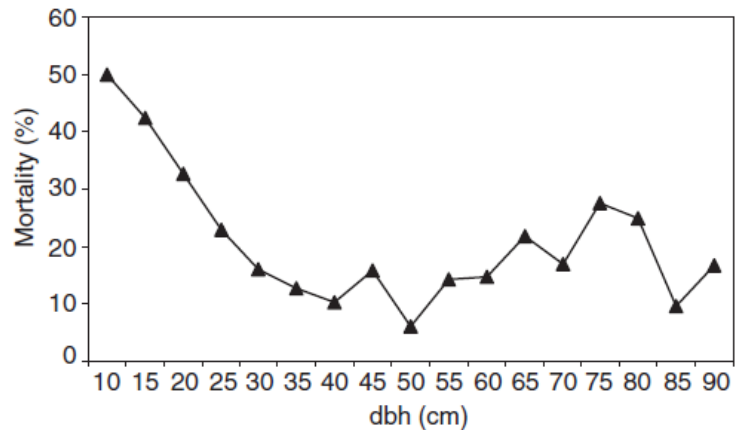


Fig. 3. Observed percent mortality of ponderosa pine 3 years after fire by 5 cm dbh class for data combined over three fires in northern Arizona. Data are not shown for dbh classes with <3 trees.

(3) Large tree conservation mitigates effects to wildlife

If reduction of crown bulk density within clumps and stands of mature ponderosa pine is necessary to meet the purpose and need for action, then it is unlikely that the project will maintain habitat for sensitive wildlife associated with closed-canopy forest, such as northern goshawk and red squirrel. Large tree removal would reduce forest canopy and diminish recruitment of large snags and downed logs, which in turn affects long-term forest dynamics, stand development and wildlife habitat suitability. Large tree recruitment will become more limiting over time as climate change imposes chronic drought and more widespread tree mortality (Diggins et al. 2010, Seager et al. 2007, van Mantgem et al. 2009, Williams et al.

Appendix E. Comment Letters Received on the DEIS

2010). The DEIS overlooks this fact in its analysis of tree growth response to proposed treatments.

Purpose and need

The Forest Service defines the purpose and need for the project so narrowly that only one action alternative – Alternative B – will meet it. *See* DEIS at 3 (describing purpose and need to move stand densities to “desired conditions”); 33-36 (Table 7 comparing effects of alternatives relative to “desired condition”); 45 (“Alternative B makes rapid progress in moving stand structures and other forest conditions toward desired conditions, compared to no change in current conditions (alternative A), and much more effectively than alternative C”). Desired conditions frame agency definition of “reasonable” alternatives and form the basis of impact comparison. 96

“Desired conditions relevant to this project relate to forest health and ecosystem function and resiliency, as defined in the Apache-Sitgreaves forest plan.” *Id.* at 3. However, the “general desired conditions” contain many items and concepts that are not in the Forest Plan.⁷ *See id.* at 5 (“The desired condition includes open grass-forb-shrub interspaces totaling 20 percent of the area of each stand. This condition also includes canopy gaps for regeneration of small trees (less than 5 inches in diameter) totaling up to another 20 percent of the area of each stand”); *id.* (“In conifer forests, a distribution of age classes would comprise a sustainable balance of structural stages (see page 8), meet general forest plan guidelines, and be consistent with the proposed forest plan amendment for this project”); 6 (“Forest canopy gaps and interspaces would be dynamic. The intent of the interspaces is for them to remain open over time, recognizing that natural vegetation development would allow some of them to develop into new tree groups/patches”); *id.* (“In this desired condition, managed uneven-aged stands would be less than 45 percent of maximum stand density index”). The Forest Plan contains no “desired condition” of “open grass-forb-shrub interspaces totaling 20 percent of the area of each stand,” nor does it pinpoint “45 percent of maximum [SDI]” as a target for uneven-aged stand management. Both are unique conventions in the Rim Lakes DEIS and achievement of those desired condition requires a plan amendment that only applies to Alternative B. *See id.* 26-28. 97

The Forest Service makes clear that has no interest in selecting any alternative other than its proposed action, which is designed to implement new policies of the Southwestern Regional Office that are not consistent with the Forest Plan. It foreshadows the outcome of the NEPA process in discussion of “Alternatives that Limit Treatment to a Specific Diameter,” casting all such vegetation treatments as “even-aged,”⁸ and stating that they “would only partially meet the 97

⁷ The Apache-Sitgreaves Forest Plan allocates 98 percent of the Rim Lakes Project area to Management Area 1 (Forested Lands). *See* DEIS at 10 (Table 1). “The management emphasis for MA-01 is to emphasize a combination of multiple uses including sustained yield of timber and firewood production, wildlife habitat, livestock grazing, watershed condition, and dispersed recreation.” *Id.*; *also see* Forest Plan at 95-113 (standards and guidelines).

⁸ The Silviculture Specialist Report on page 12 defines “even-aged” as “pertaining to a stand composed of a single age class in which the tree ages are within ± 20 percent variability based upon the mature stand age (SAF 1998)”; *also see* DEIS at 43 (same).

Appendix E. Comment Letters Received on the DEIS

purpose and need of improving forest health or reducing the risk of uncharacteristic fire, with limited longevity. Movement toward the desired conditions for forest health, vegetation structure, fuels, and wildlife habitat would be limited and short term.” *Id.* at 30; *also see id.* 33 (“Uneven-aged stands (55%) moved toward an even-aged structure ...”); 46 (“[I]mplementation of this alternative in existing uneven-aged stands would result in homogenization of forest structure such that stands would become single or two-aged after treatment...”)(emph. added).

In its zeal to dismiss Alternative C, the Forest Service misuses its own definition of “even-aged,” and inaccurately states that all uneven-aged forests treated with diameter-limited tree cutting will become even-aged. In fact,

98

A two-storied stand, one with two distinct age class and diameter distributions, is neither even or uneven-aged, but is intermediate between the two. Stratified mixtures occur where trees are essentially even-aged, but differences in growth rates and shade tolerance among tree species result in multiple canopy strata. This structure also occurs when selective regeneration of shade tolerant species or high site productivity leads to heterogeneous age and diameter distributions. In much of the mixed-conifer type in the Southwest, the stratified-mixture of stand structure appears to be relevant to habitats used by spotted owls.

USDI (1995: 69). Two-aged stands do not satisfy the definition of even-aged, and the passage quoted above makes clear that “two-storied stands” comprise suitable habitat for threatened birds that nest and roost in multi-storied forest. Indeed, even under Alternative B, which would remove trees of all size classes, “Application of the group selection method could provide a mosaic of many small even-aged or two-storied groups across a forest stand.” *Id.* at 70. The DEIS fails to quantify the number of uneven-aged stands where diameter limited tree cutting would “homogenize” forest structure such that only “a single age class” would remain following implementation of Alternative C. It likewise fails to explain how group selection cuts in Alternative B would avoid creating even-aged or “two-aged” forest. *See* AGFD (2007) (“Managing tree groups by VSS class comes across as even-aged tree group management”).

Tellingly, Figure 6 on page 17 of the Silviculture Specialist Report⁹ displays “Moderate stand density adjacent to the project area (thinned from below to 16” diameter, all trees have been removed under 10 inches to meet density and fuel hazard reduction objectives)” (emph. added). The photo does not show a forest transformed to an even-aged condition by diameter-limited tree cutting so much as it demonstrates that the Forest Service elected to create even-aged forest structure by removing “all trees” under 10-inches diameter to achieve desired conditions. The report does not specify which desired conditions informed the particular forest treatments depicted in that photo.

99

⁹ On November 9, 2012, the Center requested a copy of the Silviculture Specialist Report from Gayle Richardson, Black Mesa District Silviculturalist. Ms. Richardson stated on the telephone, “You’re going to get the 2011 one,” and explained that the report is still in draft form and subject to revision. Therefore, this comment is based on the Center’s review of the 2011 version of the Silviculture Report. The Center requested but was not provided and has not reviewed “Richardson, Gayle, and James A. Youtz. 2012. Silviculture Specialist Report,” cited on page 245 of the DEIS.

Old growth

101

Old growth forests differ in structure and function from younger forests. They comprise preferred habitat of many endangered, threatened and sensitive wildlife species, and provide a host of ecological services including overall watershed function, clean water, soil retention and storage of greenhouse gasses (Kaufmann et al. 1992, Luyssaert et al. 2008). Old growth habitat consists of large trees with fire-resistant “plated” bark structure and tall canopies, large standing dead trees (“snags”) with nesting cavities and broken tops, as well as vertical and horizontal structural diversity within stands. Numerous analyses conducted by the Forest Service and others demonstrate that logging significantly affects long-term recruitment of coarse wood and old growth habitat (*e.g.*, Quigley et al. 1996, Spies 2004, van Mantgem et al. 2009). Most of the former old growth forests throughout the ponderosa pine and mixed conifer formations of the Southwestern Region have been eliminated by logging (Covington and Moore 1994).

102

The 1996 Forest Plan Amendment for the Southwestern Region (USDA 1996b) includes mandatory standards and guidelines for old growth habitat management. Each national forest, including the Apache-Sitgreaves, must allocate no less than 20 percent of each forested “ecosystem management area” to old growth habitat. In order to properly determine old growth habitat, the Forest Service must refer to a specific table included sets forth detailed minimum numeric criteria for various forest types, including the size, age and number of live and dead trees, down trees and canopy cover. *See* Forest Plan at 97-99. Forested sites must meet or exceed these numeric structural attributes in order to be considered old growth habitat. In addition, the Forest Plan requires the agency to analyze old growth habitat at multiple scales: (1) the ecosystem management area; (2) one scale above the ecosystem management area; and (3) one scale below the ecosystem management area. The amount of old growth that can be provided and maintained must be evaluated at the ecosystem management level and be based on forest type, site capability and disturbance regimes.

103

The project area, like the national forest as a whole, is deficient in old growth habitat. This is largely due to past timber harvesting. *See* DEIS at 160 (“The dominant mid-seral conditions on the ASNFs primarily relate to cumulative effects of historical heavy logging such as the railroad logging early in the 20th century and long term fire suppression. Overstory removal prescriptions also contributed to the trend toward smaller diameter stands”).

104

The first timber harvest entries in the project area occurred in the 1940s. These actions focused on removal of large dying trees and high grade lumber. From the 1950s to 1970s, management focused on sanitation/salvage of dying, diseased, or damaged trees. Minimal amounts of forest density management occurred during this period. In the 1960s, the practice of cutting snags to reduce fire hazard also reduced the number of snags currently standing but may have increased the number of logs present in some areas. Starting around 1980, forest management focused on even-aged timber sales, *i.e.*, cutting all the trees and developing stands of the same age and size. Treatments were conducted on selected stands and large blocks throughout the project area (approximately 44 percent of the area).

105

Individual stand treatments focused on overstory removal of mature trees where a younger age class was present. Where mature trees dominated, regeneration treatments focused on removal of most overstory trees and retention of scattered low density seed

Appendix E. Comment Letters Received on the DEIS

trees. Where sapling or mid-aged trees dominated, treatments focused on thinning to manage stand density. Much of the thinning treatments yielded pulpwood products for paper, and the removal and regeneration treatments yielded sawtimber products primarily for lumber.

Past timber sales in and near the project area, such as Carr Lake, Deer Lake, Palomino, and others, all implemented prior to the 1996 forest plan amendment for owl and goshawk, targeted the harvest of medium and large diameter trees. In some cases, all trees over 12 inches in diameter were removed. This even-aged forest management focus continued until the mid-1990s, leaving the legacy of current forest structural conditions across the landscape.

106

Id. at 39. Only seven percent of the project area is allocated to old growth management. *Id.* at 4. “Areas currently allocated do not necessarily meet old growth standards in the forest plan but are managed to move toward those conditions to meet old growth structural attributes over time.” *Id.* at 9.

107

Both action alternatives (B and C) would “Allocate approximately 6,900 acres of forest for old growth characteristics especially large tree health and vigor.” *Id.* at 10; *also see id.* 23 (Figure 6 shows old growth allocations). However, the new allocation will not comprise old growth habitat meeting Forest Plan standards. Instead, the “developing old growth” shown in Figure 6 “would be treated to move toward old growth management objectives found in the forest plan. Specifically, treatments that help develop large trees where few exist, while maintaining the health and vigor of existing large trees, especially those greater than 18 inches diameter.” *Id.* at 24 and 53 (emph. added). Note that Figure 6 only shows “developing old growth” within the project area, and “existing old growth” outside of it. *Id.* at 23 (Fig. 6).

In scoping comments dated April 30, 2012, the Center stated, “The environmental analysis should disclose the spatial extent of old growth stands that meet Amended Forest Plan criteria at each of the prescribed scales. This information should be clearly displayed in a manner that is easily understood by public. The assessment should clearly depict the number of acres that meet or do not meet old growth criteria at each scale.” The DEIS lacks this information. The agency never quantifies or locates existing old growth habitat meeting Forest Plan standards. It merely describes the extent of “allocated old growth” or “developing old growth,” and fails to describe the existing condition of old growth habitat or project effects to it. The phrase, “developing old growth” does not occur in the Forest Plan, and the DEIS does not define it.

108

The Forest Service acknowledges that large tree removal under Alternative B “may place posttreatment [sic] large tree densities below target densities. This may negatively affect old growth quality and quantity and wildlife habitat quality, quantity, and populations.” DEIS at 13. Indicators of project effects to old growth habitat are:

109

- Total number of trees 16 inches and greater (pre- and post-treatment);
- Pre- and post-treatment three-level analysis of habitat structure for northern goshawk, and old growth; and
- Vegetation structural stage (VSS) for northern goshawk.

Appendix E. Comment Letters Received on the DEIS

Id. However, the DEIS does not describe any effects of Alternative B to existing old growth, nor does it quantify how much old growth would remain following project implementation. 110

According to its index, the DEIS discusses “treatment effects” to old growth on page 53. *Id.* at 271. The passage quoted below is the full analysis of effects:

Mixed conifer forest stands would be managed to favor dominance by shade-intolerant species over much of the project area (except for MSO protected forest habitat and restricted habitat managed for threshold habitat values). Allocated old growth stands and other areas would be treated to improve health and vigor of the stand, and to manage forest structure toward desired conditions. Natural meadows and openings would be maintained by removing conifers which have encroached upon these areas, post-European settlement. Quaking aspen and Gambel oak patches would be released or favored to develop. Understory grasses, forbs, and shrubs would respond to these opened canopy conditions, and increase in abundance and vigor. Management would focus on favoring and regeneration of southwestern white pine in locations where it currently exists.

Id. at 53 (emph. added). It merely states that “allocated old growth stands” would be mechanically thinned and burned. Likewise, under the heading, “Vegetation Effects Details,” the DEIS discusses the allocation of old growth for mapping, but not treatment effects: 111

Alternative B would meet the forest plan percentages for old growth allocation within the project area, and would move the total district acres toward meeting the percentages for mixed species and for ponderosa pine as shown in table 22. This alternative proposes allocating 9,394 acres with an existing large tree component and thinning to improve forest health, increase tree size growth, and reduce fire hazard. Stands proposed for thinning would develop toward old growth characteristics described in the forest plan over time (Richardson et al., 2012). Stands identified as MSO protected habitat, target threshold, threshold, and goshawk habitat on slopes 40 percent and greater, were allocated for old growth development within the project area. Alternative C would allocate the same amount of area for old growth management as alternative B. 112

Id. at 59 (emph. added). Clearly, the Forest Service intends to “develop” old growth. But the DEIS never discloses how much old growth habitat exists or how much would be degraded or removed. More, it does not supply the “pre- and post-treatment three-level analysis of habitat structure” which the agency identified as an indicator of project effects.

The DEIS misleads readers about project effects to old growth habitat. It states, 113
“Alternative B would retain current old growth habitat and develop old growth components in newly allocated stands within MSO stratified habitat.” *Id.* at 94. More, “Alternative B would preserve current old growth habitat and develop old growth components in designated stands within northern goshawk stratified habitats (figure 14) on 223 acres that would be allocated to be managed for old growth structure. Old growth wildlife habitat would increase as designated stands increase in maturity over time.” *Id.* at 115-116.

Appendix E. Comment Letters Received on the DEIS

However, the analysis cited above clearly is erroneous because Alternative B makes specific provision for removing trees of all size classes >18-inches diameter in ponderosa pine forest, as well as trees up to 24-inches diameter in mixed conifer and pine-oak habitats. *See id.* at 79 (Table 31 – proposed alternatives in MSO habitat); 80 (Tables 32, 33 – northern goshawk and “other” habitats). Alternative B would remove more than 31,000 trees larger than 16-inches diameter. *See id.* 58 (Table 21). And it would amend the Forest Plan to eliminate standards and guidelines that require retention of VSS 6 (old forest >24-inches diameter) where it is deficient. *See id.* at 26 (proposing exceptions to VSS 6 retention guidelines); 49 (“VSS 6 groups would be treated where they are severely infected with dwarf mistletoe ...”).

The extent of old growth removal or degradation is unknown because the Forest Service fails to disclose it. Instead, the agency errantly states that its proposed action would “retain” or “preserve” existing old growth habitat. Removal of old growth quality forest structure may be a cumulatively significant environmental impact. 40 C.F.R. §§ 1508.7, 1508.27(b)(7).

The Forest Service must analyze and disclose how many acres within the affected ecosystem management area meet the minimum numeric criteria for old growth habitat that are set forth in the Forest Plan, must assess the existing and potential impacts to old growth habitat at the required scales, must allocate no less than 20 percent of each forested ecosystem management area to old growth as depicted in the Forest Plan, and must not log any of the remaining large trees within the project area until it meets these mandatory requirements.

The DEIS does not objectively or accurately analyze and disclose project impacts on old growth habitat. Alternative B in the Rim Lakes DEIS would violate the old growth standards and guidelines by failing to demonstrate that 20 percent of each ecosystem management area is allocated to old growth, as defined by the Forest Plan; by failing to disclose an analysis of impacts to old growth at multiple scales, including one scale above and one scale below ecosystem management areas; by failing to develop and retain old-growth function on at least 20 percent of the naturally forested area by forest type; and by proposing to log thousands of old growth trees despite noncompliance with old growth habitat requirements. 16 U.S.C. § 1604(i).

Mexican spotted owl

The Rim Lakes Project would apply mechanical logging systems on 6,641 acres of suitable nesting and roosting habitat for threatened Mexican spotted owl (“MSO”) in mixed-conifer and pine-oak forest types. *See* DEIS at 91 (Table 47). That equates to approximately 59 percent of the 11,267 acres of suitable owl habitat that exists in the project area. *Id.*

114

Protected activity centers (PACs) are categorized as protected habitat as well as all areas in mixed conifer and pine/oak habitat types with slopes greater than 40 percent where timber harvest has not occurred in the past 20 years (USDI 1995). The project area contains approximately 1,996 acres of MSO protected habitat, of which 1,303 acres are within designated PACs that are considered occupied.

Restricted habitat is defined as unoccupied mixed conifer forests, pine/oak forests, and riparian areas on slopes less than 40 percent (USDI 1995). Approximately 9,281 acres of

Appendix E. Comment Letters Received on the DEIS

MSO restricted habitat exists within the project area, of which 6,710 acres are mixed conifer forest, and 2,571 acres are pine/oak forest.

115

Id. at 84. Four PACs exist in the project area which the Forest Service assumes to be occupied by MSO. *Id.* at 86. Another 14 PACs exist within a quarter-mile of the project area, but the DEIS contains no information about occupancy. *Id.* An EIS must consider “The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the [ESA].” 40 C.F.R. § 1508.27(b)(9).

The project area also contains spotted owl critical habitat:

The project area has approximately 3,886 acres of critical habitat that meet the definition of MSO protected or restricted habitat. Where possible, areas within designated critical habitat must be managed to maintain or enhance primary constituent habitat elements. These elements include criteria associated with the range of tree and plant species, canopy closure, snags, downed logs, and residual plant cover (USDI 2004). This requirement applies to the 3,886 acres of critical habitat that meet the MSO definition.

Id. at 85. MSO critical habitat exists on a total of 23,670 acres in the project area. *See id.* 90 (Table 45). Of this total, the Forest Service proposes mechanical logging on 17,212 acres, or about 73 percent of critical habitat. This includes logging on 13,326 acres of ponderosa pine forest, which is not considered suitable as nesting/roosting habitat, but is nonetheless important for spotted owl life behaviors such as foraging, dispersal and wintering. *Id.*; *also see* USDI (1995: 83). In addition, “Approximately 22,507 acres of MSO critical habitat would receive low severity prescribed burning under either alternative B or alternative C ...” *Id.* at 89. Therefore, about 95 percent of critical habitat in the project area would be actively managed with mechanical logging, prescribed fire or a combination of both treatment methods. The DEIS does not make these facts clear to the public.

Critical habitat overlaps protected areas (including PAC) and restricted habitat described in the MSO Recovery Plan (USDI 1995) which contain “one or more of the primary constituent elements” of habitat considered “essential for the conservation” of the species. *See* 69 Fed. Reg. 53185-86, 53189-90, 53192, 53212 and 53217 (Aug. 31, 2004). Primary constituent elements (“PCE”) are “those physical and biological features ... that are essential to conservation of the species and that may require special management considerations or protection.” *Id.* at 53208. “All areas that are designated as critical habitat contain primary constituent elements and are considered essential for the conservation of the species.” *Id.* at 53186; *see also id.* 53189, 53190, 53192, 53212 and 53217.

116

The U.S. Fish and Wildlife Service (“FWS”) identified categories of PCE which occur in mixed conifer, pine-oak and riparian forest types, and in canyons:

A. PCE related to forest structure:

117

- (1) A range of tree species, including mixed-conifer, pine-oak, and riparian forest types, composed of different ages of trees, 30 percent to 45 percent

Appendix E. Comment Letters Received on the DEIS

- of which are large trees with a trunk diameter of 12 inches (0.3 meters) or more when measured at 4.5 feet (1.4 meters) from the ground.
- (2) A shade canopy created by the tree branches covering 40 percent or more of the ground.
- (3) Large dead trees (snags) with a trunk diameter of at least 12 inches (0.3 meters) when measured at 4.5 feet (1.4 meters) from the ground.

B. PCE related to maintenance of adequate prey species:

- (1) High volumes of fallen trees and other woody debris.
- (2) A wide range of tree and plant species, including hardwoods.
- (3) Adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration.

C. PCE related to canyon habitat:

- (1) Presence of water (often providing cooler and often higher humidity than the surrounding areas);
- (2) Clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, and/or riparian vegetation;
- (3) Canyon wall containing crevices, ledges, or caves; and
- (4) High percent of ground litter and woody debris.

See 69 Fed. Reg. 53211 and 53232 (Aug. 31, 2004). The Rim Lakes Project would only affect the third category of PCE with prescribed fire. However, mechanical logging combined with prescribed fire in the rest of the project area may adversely affect one or more PCE related to forest structure and prey availability. In particular, it would destroy snags larger than 14 inches in diameter and preclude recruitment of coarse woody debris. *See* DEIS at 98 (burning may reduce large snags). Also, ground disturbance in opening Level 1 roads and use of log harvesting equipment on an undisclosed area would impair “adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration,” following project implementation.

The Forest Service admits that ground disturbance would negatively affect forest soils. 118 *See* DEIS at 198 (citing administrative study of soil disturbances by logging equipment implementing treatments similar to those proposed in alternative B and C, and finding “reductions in soil conditions” to “either impaired or unsatisfactory” on 19 percent of the Greer study area); 199 (“Prescribed fires can reduce the level of organic debris available for soil fertility maintenance, particularly where they reach moderate to high severity levels”). But it does not give any attention to effects of ground disturbance on PCE that result from opening Level 1 roads or deployment of logging equipment. It merely asserts that best management practices (“BMP”) will “minimize” soil impacts better than if no precautions are observed. *See id.* 199 (“Where mechanical harvesting/thinning is practiced, short-term increases in erosion related to ground cover disturbance are minimized by BMPs (appendix B) that retain slash and limit disturbance and soil displacement”). Please note that slash retention cannot be used to mitigate soil exposure and erosion on any significant extent of the project area without undermining the purpose and need for action. *See id.* (“An objective of the Rim Lakes Project is

Appendix E. Comment Letters Received on the DEIS

to reduce the occurrence of hazardous fuels—both standing and on the forest floor. Reducing these categories of hazardous fuels necessarily leads to a lower input of organic soil carbon to the soil layers”).

Furthermore, the MSO Recovery Plan (USDI 1995) suggests that uneven-aged management proposed in Alternative B, which would remove more than 31,000 large trees, may adversely affect the large tree PCE in the project area, the national forest, and the range of the species: 119

We have not been able to assess the effects of classic uneven-aged management on Mexican spotted owl habitat because we were unable to acquire data for most areas where uneven-aged management is practiced on a large scale. However, based upon our understanding of the application of uneven-aged systems, stand density is often kept at a fairly low level, seldom exceeding 18 m²/ha (80 ft²/acre) of basal area. These low residual stand densities allow for regeneration and growth of ponderosa pine. Uneven-aged systems, whether they retain individual trees or groups of trees, allow for the development of multiple canopy levels, a key component of Mexican spotted owl habitat. However, Ganey and Dick (1995) demonstrate clearly that owl habitat typically also includes significant numbers of large trees. These large trees may not be retained where uneven-aged management is applied in this fashion.

In summary, uneven-aged management has some promise for providing stands exhibiting characteristics of spotted owl habitat. As currently practiced, however, uneven-aged management results in large acreages of low-density stands, numerous road openings, and the eventual eradication of large diameter stems. Although neither the short- or the long-term effects of these applications on spotted owls are known, this type of application may not be the best option for producing spotted owl habitat.

USDI (1995: 71). The project would retain just 60-80 square feet of basal area (“BA”) in critical habitat. *See* DEIS at 19. Past timber harvest caused significant decline of large tree density in the project area and throughout the range of Mexican spotted owl. *See id.* 68 (“[T]he density of large trees (>48 cm [19 in] dbh) decreased from 2.3 to 1.7 trees/ha (0.9 to 0.7 trees/ac), a 20% decline” ... “[T]he 20% decrease in the density of large trees is an alarming negative trend with respect to a very critical component of spotted owl habitat”); *also see* DEIS at 39 (describing effects of past timber management to forest structure in project area); 160 (“The dominant mid-seral conditions on the ASNFs primarily relate to cumulative effects of historical heavy logging such as the railroad logging early in the 20th century and long term fire suppression. Overstory removal prescriptions also contributed to the trend toward smaller diameter stands”). 120

Alternative B would remove large trees up to 24-inches diameter on 5,518 acres of restricted habitat. *See* DEIS at 20 (Tables 2, 3); 91 (Table 47 – prescriptions). “MSO restricted habitats would be managed from current condition toward desired long-term management of stand density index stand structure.” *Id.* at 87. This project does not occur in isolation, as many other proposed Forest Service actions also would degrade the large tree PCE in critical habitat (*e.g.*, Wallow West and Wallow Alpine projects in Apache-Sitgreaves NFs; Clints Well, Mahan-Landmark, Turkey Butte and Wing Mountain projects in Coconino NF; Bill Williams and McCracken projects in Kaibab NF; 4FRI project in Coconino and Kaibab NFs). Degradation of the large tree PCE in critical habitat may be cumulatively significant. 40 C.F.R. § 1508.7. 121

122

Moreover, uneven-aged management that removes large trees is counter to project and Forest Plan objectives for critical habitat. The percentage of maximum stand density index (“SDI”) that currently exists in pine-oak restricted habitat is below the “desired condition” for the 18-inch to 24-inch tree size class. *See* DEIS at 87 (Table 41 shows “Existing Condition Pine-Oak” as “13,” and “Desired Condition” as “15+”); *also see id.* (“Table 41 and figure 15 display the percent of the maximum SDI by size class compared to the desired percent of the maximum SDI by size class for MSO mixed conifer and pine-oak habitat from the MSO recovery plan and forest plan guidelines”). Stand density reduction that removes any trees of that size class would undermine achievement of desired conditions and the purpose and need. The DEIS does not disclose the number or extent of groups comprising 18- to 24-inch diameter trees (VSS 5 – mature forest) that would be removed in pine-oak restricted habitat under Alternative B. It allows that trees up to 24-inches diameter may be removed on 5,518 acres of restricted habitat including pine-oak forest. *See id.* 20 (Tables 2, 3); 91 (Table 47). The Forest Plan directs, “Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.” Forest Plan at 52.

123

The Endangered Species Act (“ESA”) and its implementing regulations prohibit the unauthorized “take” of protected species. 16 U.S.C. § 1538(a)(1); 16 U.S.C. § 1533(d); 50 C.F.R. § 17.31. “Take” is broadly defined to include harm, harassment, trap, capture, wounding or killing a protected species either directly or by impacting its habitat. 16 U.S.C. § 1532(19); *Center for Biological Diversity v. Bureau of Land Management*, 422 F. Supp. 2d at 1127 n. 7. Section 7 of the ESA requires federal agencies, in consultation with the FWS, to ensure that any action authorized, funded or carried out by an agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species, or (2) result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(a)(2). “Action” is defined to include all activities or programs of any kind authorized, funded or carried out by federal agencies, including actions directly or indirectly causing modifications to the land, water or air; and actions intended to conserve listed species or their habitat. 50 C.F.R. § 402.02.

124

Forest plans are agency actions pursuant to Section 7 of the ESA. *Center for Biological Diversity v. U.S. Fish and Wildlife Service*, 623 F.Supp. 2d 1044, 1054 (N.D. Cal. 2009), *citing Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1053-54 (9th Cir. 1994). The Rim Lakes Project would implement the Apache-Sitgreaves National Forests Plan. *See* DEIS at 3.

125

For each federal action, the Forest Service must request from FWS whether any listed or proposed species may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. If listed or proposed (candidate) species may be present, the Forest Service must prepare a “biological assessment” to determine whether listed species may be affected by the proposed action. *Id.* If the Forest Service determines that a proposed action may affect any listed species or critical habitat, the agency must consult with FWS. 50 C.F.R. § 402.14.

To complete formal consultation, FWS must provide the Forest Service with a “biological opinion” explaining how the proposed action will affect the listed species or habitat. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14. The biological opinion “is required to address both the ‘no jeopardy’ and ‘no adverse modification’ prongs of Section 7.” *Center for Biological*

Appendix E. Comment Letters Received on the DEIS

Diversity v. Bureau of Land Management, 422 F. Supp. 2d 1115, 1127 (N.D. Cal. 2006), citing 50 C.F.R. § 402.14(g)(4).

If FWS concludes that the proposed action “will jeopardize the continued existence” of a listed species, the biological opinion must outline “reasonable and prudent alternatives.” 16 U.S.C. § 1536(b)(3)(A). If the biological opinion concludes that the action is not likely to jeopardize the continued existence of a listed species, and will not result in the destruction or adverse modification of critical habitat, FWS must provide an “incidental take statement,” specifying the amount or extent of such incidental taking on the species, any “reasonable and prudent measures” that FWS considers necessary or appropriate to minimize such impact, and setting forth the “terms and conditions” that must be complied with by the agency to implement those measures. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i). Both the biological opinion and the incidental take statement must be formulated by the FWS in formal consultation. *Oregon Natural Resources Council v. Allen*, 476 F.3d 1031, 1036 (9th Cir. 2007), citing 50 C.F.R. §§ 402.14(g), (i)(1). 126

In order to monitor incidental take, the Forest Service must report the impact of its action on the listed species to FWS. 50 C.F.R. § 402.14(i)(3). If during the course of the action the amount or extent of incidental taking is exceeded, the Forest Service must immediately reinstate consultation. 50 C.F.R. § 401.14(i)(4). The reinstatement of formal consultation is required and must be requested by the Forest Service or FWS if (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the action is modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. 50 C.F.R. § 402.16.

From 1985 to 1988, the Forest Service developed and approved Forest Plans for the eleven national forests in the Southwestern Region, including the Apache-Sitgreaves Forests. In 1993, the MSO was listed as a threatened species under the ESA. In 1995, the Forest Service requested consultation on the Forest Plans in the Southwestern Region concerning impacts to the MSO. In 1996, FWS issued a biological opinion on the eleven Forest Plans, which concluded jeopardy to the MSO and adverse modification for MSO critical habitat. The Reasonable and Prudent Alternative in that biological opinion advised the Forest Service to implement the 1995 MSO Recovery Plan (USDI 1995).

In 1996, the Forest Service amended all Forest Plans in the Southwestern Region to include standards and guidelines for MSO. One of those standards directs the Forest Service to “implement threatened and endangered species recovery plans.” Forest Plan at 46. The plan standards also require the agency to “Monitor changes in owl populations and habitat needed for delisting.” *Id.* at 48. The amended Forest Plan establishes the following monitoring guidelines: 127

Monitoring and evaluation should be collaboratively planned and coordinated with involvement from each national forest, USFWS Ecological Services Field Office, USFWS Regional Office, USDA Forest Service Regional Office, Rocky Mountain Research Station, recovery team, and recovery unit working groups. 128

Appendix E. Comment Letters Received on the DEIS

Population monitoring should be a collaborative effort with participation of all appropriate resource agencies.

Habitat monitoring of gross habitat changes should be a collaborative effort of all appropriate resource agencies.

Habitat monitoring of treatment effects (pre- and post-treatment) should be done by the agency conducting the treatment.

Prepare an annual monitoring and evaluation report covering all levels of monitoring done in the previous year. The annual report should be forwarded to the Regional Forester with copies provided to the recovery unit working groups, USFWS Ecological Services field offices, and the USFWS Regional Office.

Rangewide: Track gross changes in acres of owl habitat resulting from natural and human caused disturbances. Acreages changes in vegetation composition, structure, and density should be tracked, evaluated, and reported. Remote sensing techniques should provide an adequate level of accuracy.

129

In protected and restricted areas where silvicultural or fire abatement treatments are planned, monitor treated stand pre- and post-treatment to determine changes and trajectories in fuel levels; snag basal areas; live tree basal areas; volume of down logs over 12 inches in diameter; and basal area of hardwood trees over 10 inches in diameter at the root crown.

130

Id. at 53. Additionally, in the Upper Gila Mountains Recovery Unit, which includes the project area, the Forest Service is required to:

Assist the recovery team and recovery unit working groups to establish sampling units consisting of 19 to 39 square mile quadrants randomly allocated to habitat strata. Quadrants should be defined based on ecological boundaries such as ridge lines and watersheds. Quadrant boundaries should not traverse owl territories. Twenty percent of the quadrants will be replaced each year at random.

Using the sample quadrants, monitor the number of territorial individuals and pairs per quadrant; reproduction; apparent survival; recruitment; and age structure. Track population density both per quadrant and habitat stratum.

131,
132

Id. at 54.

In May 1996, FWS issued a biological opinion on the 1996 Plan Amendment, concluding that the new standards and guidelines would not jeopardize the continued existence of MSO. Importantly, FWS assumed on page 31 of that biological opinion that the Forest Service would implement the Recovery Plan (USDI 1995):

133

The Service has evaluated the impacts to the owl in this consultation under the assumption that essential components of the Recovery Plan will be implemented. These include population and habitat monitoring for the owl that will standardize monitoring efforts for tracking the region-wide condition of owl habitat. This in turn should greatly increase the consistency and reliability of data used in determining the baseline

Appendix E. Comment Letters Received on the DEIS

conditions. Because some of the management guidelines in the Recovery Plan are largely untested the Recovery Plan itself recognizes that timely implementation of the monitoring is essential to validate and, if necessary, adjust the recovery strategy presented in the Plan. The continuing effectiveness of this biological opinion depends on the validity of the Recovery Plan strategy and on confirmation that the inferred baseline conditions accurately reflect the status of owl populations and habitat. Accordingly, the Service expects that the Forest Service will initiate the pilot study for the population and microhabitat monitoring program within one year of the issuance of this biological opinion. If timely progress is not made on the monitoring program, re-initiation of consultation will be necessary to re-evaluate impacts to the species and habitat.

The Recovery Plan (USDI 1995) emphasizes monitoring of population and habitat trends:

134

For the spotted owl to be delisted within any [Recovery Unit – “RU”], the following conditions must be met. First, threats to the continued loss of habitat and key habitat components must be moderated and regulated as detailed in the previous section. Second, habitat trends must be monitored no assess gross changes in habitat quantity within each RU. Third, effects of modifying activities within existing and potential spotted owl habitat must be monitored no ensure that existing habitat is maintained and potential habitat is progressing towards becoming replacement habitat.

USDI (1995: 81). More,

In formulating our recommendations, we assume that population and habitat status will be monitored in conjunction with implementation of these management guidelines. This Recovery Plan is analogous no a three-legged stool (Figure III.B.1); therefore, the management guidelines are nor meant to stand alone. Monitoring provides objective criteria no assess the efficacies of the management guidelines. Without both habitat and population monitoring, the status of the owl cannot be assessed and in should nor be delisted. We further assume that existing management constraints on vegetative manipulations (such as size of openings and maintenance of hiding and thermal cover for other species) will remain in place. This assumption is especially critical for vegetation types – ponderosa pine, pinyon-juniper, aspen, and spruce-fir – for which we provide no specific management recommendations.

USDI (1995: 82). Thus, monitoring is a fundamental requirement of the MSO Recovery Plan and the Forest Service is obligated by the Forest Plan to implement it.

135

In 2004, the Forest Service sought to reinstitute consultation with FWS on the continued implementation of Forest Plans in the Southwestern Region. In June 2005, FWS issued a biological opinion concluding that the eleven Forest Plans would likely result in incidental taking of MSO, but this level of take was not likely to jeopardize MSO because the Forest Plans incorporate and implement the Recovery Plan. FWS recognized that “no long-term monitoring has been initiated pursuant to the owl Recovery Plan.” FWS included in the 2005 biological opinion “reasonable and prudent measures” and “terms and conditions,” including that the Forest Service monitor MSO occupancy on national forest lands, pursuant to the Recovery Plan. It determined that the anticipated level of take was most appropriately quantified in terms of the number or percent of PAC with disturbance and/or habitat alteration. FWS anticipated that take is reasonably certain to occur within five percent of the total PACs in the form of harm, and five

Appendix E. Comment Letters Received on the DEIS

percent of the total number of PACs in the form of harassment, for a total of a 10 percent as a result of the proposed action. The anticipated take is set forth per recovery unit.

137

The Rim Lakes Project proposes mechanical treatments of forest vegetation on 281 acres in the Ridge PAC in addition to 16,694 acres of other critical habitat. *See* DEIS at 20, 89-91. A total of 1,039 acres in four PACs also would be directly affected by prescribed fire. *See id.* 92 (Table 48). “Approximately 22,507 acres of MSO critical habitat would receive low severity prescribed burning under either alternative B or alternative C ...” *Id.* at 89.

138

As set forth in the 2005 biological opinion, to be exempt from the ESA Section 9 prohibition on take, the Forest Service must comply with the terms and conditions of the incidental take statement. The terms and conditions for MSO include specific monitoring requirements. The Forest Service must monitor PAC occupancy pursuant to the most recent version of the Recovery Plan (USDI 1995). This monitoring must assess changes in occupancy rates so that management actions can be adjusted if changes in MSO populations occur. Additionally, in order to monitor the impacts of incidental take, the Forest Service must track and report the effects of implementing Forest Plans on MSO.

139

In October 2008, the Forest Service provided its “Annual Report” to the FWS for the period of June 10, 2005, through June 10, 2007, regarding the Programmatic Biological Opinion on the Land and Resource Management Plans for the 11 National Forests in the Forest Service Southwestern Region. The Forest Service acknowledged in the report that it failed to comply with the monitoring requirements set forth in the biological opinion’s terms and conditions, and/or likely exceeded the allowable incidental take for a number of listed species, including MSO. The Forest Service typically monitored only 20-25% of PACs during 2005-07. Moreover, the agency monitored PACs for owl occupancy but not reproduction. The Forest Service stated in the report that personnel and funding levels are not adequate to meet the monitoring requirements set out in Term and Condition 3.1 of the biological opinion. As a result, in many cases, monitoring has not been accomplished.

140

On April 17, 2009, the Forest Service requested to reinstate formal consultation with FWS regarding the Forest Plans in the Southwestern Region. The Forest Service informed FWS that it would soon exceed the amount of take issued for MSO, and that it is unable to implement and comply with the monitoring requirements in the 2005 biological opinion for several species including MSO. FWS eventually agreed to the Forest Service’s request to reinstate consultation.

141

On October 11, 2011, the Forest Service was held to be in violation of the ESA for failing to monitor for MSO as required by the 2005 biological opinion. *Center for Biological Diversity v. U.S. Forest Service*, 2011 U.S. Dist. LEXIS 123320 (D. Ariz. 2011).

On April 30, 2012, FWS issued a biological opinion for the Continued Implementation of the Land and Resource Management Plan for the Apache-Sitgreaves NFs (USDI 2012). That opinion states that the proposed action is the implementation of the individual Forest Plan. It omits the requirement to monitor MSO occupancy or population trends. Instead, the biological opinion’s “reasonable and prudent measures” and “terms and conditions” only require the Forest Service to monitor the impacts of site-specific projects on MSO.

Appendix E. Comment Letters Received on the DEIS

In 2011 and 2012, a number of large wildfires and related fire suppression activities in 142 the Southwestern Region may have adversely affected MSO and its critical habitat. These include the 538,000 acre Wallow fire on the Apache-Sitgreaves National Forests, the 222,954 acre Horseshoe Two fire and the 68,078 acre Murphy Complex fires on the Coronado National Forest, the 156,593 acre Las Conchas fire on the Sante Fe National Forest, the 297,845 acre Whitewater-Baldy Complex fires on the Gila National Forest, and the 44,330 acre Little Bear fire on the Lincoln National Forest. For each of these wildfire events, the Forest Service used fire suppression techniques, including igniting back burns, fireline construction and aerial deployments of chemical fire retardant. A combination of the large-scale wildfires and the Forest Service's fire fighting tactics may have resulted in adverse impacts and the taking of MSO. The Forest Service and FWS have not consulted, pursuant to Section 7 of the ESA, to assess the potential adverse effects to MSO and its critical habitat resulting from the 2011 and 2012 wildfires and associated impacts.

The Wallow fire affected no fewer than 63 of the 136 PAC on the Apache-Sitgreaves National Forests.¹⁰ The FWS stated in the 2012 biological opinion that 76 PACs were located in the Wallow Fire perimeter (USDI 2012). This equates to 52 percent of the known PACs on the Apache-Sitgreaves NFs. "Bond et al. (2009) concluded that assessments of fire impacts should not assume that all fires have negative impacts on MSOs and recommended that burned forests within 1.5 km of MSO roosts or nests not be salvage-logged" (USDI 2012: 17). On June 12, 2012, the Apache-Sitgreaves Forest Supervisor approved post-fire salvage logging of more than 10,000 acres of MSO habitat. 143

The Forest Service has failed to "monitor changes in owl populations and habitat needed for delisting," as required by the Forest Plan, in violation of NFMA. Forest Plan at 48. The DEIS summarizes survey efforts in four PACs that overlap the project area during the period of 2006 to 2010. "Completed surveys specific to this project analysis were conducted in 2006 and 2007 ..." DEIS at 85. The Palamino PAC was "not monitored" in 2009 and 2010, and the Deer Lake Canyon and Woods Canyon PACs also were "not monitored" in 2010. *Id.* (Table 37). "Pre- and post-treatment monitoring should be conducted in all PACs treated for fire risk abatement ..." Forest Plan at 50. The project fails to implement the MSO recovery plan. *See id.* 46 and 48; *also see* USDI (1995: 81-82). 144

If the Forest Service wishes to eliminate the Forest Plan monitoring requirement for MSO, it may only do so in accordance with mandatory NFMA and NEPA procedures. A Forest Plan may be amended "in any manner whatsoever after final adoption after public notice," and, if such amendment would result in a significant change, the Forest Service must follow comparable procedures as required for initial development of the Plan. 16 U.S.C. § 1604(f)(4).¹¹ 145

¹⁰ See attached spreadsheet "classification_summary by PAC" created by the Center using Forest Service data quantifying PAC acreage impacted by the Wallow fire in the Apache-Sitgreaves National Forest.

¹¹ The Forest Service is in the transition period for the 2012 NFMA regulations. 36 C.F.R. § 219.17(b)(2) (2012). However, under either the prior 1982 or the new 2012 regulations, public participation and NEPA compliance are required for Forest Plan amendments. 36 C.F.R. § 219.10(f) (1982) (stating that even if the proposed amendment is not significant, the Forest Service must follow 146

Eliminating the MSO monitoring requirement in the Forest Plan without amending the Plan through the required procedures would violate NFMA. 16 U.S.C. § 1604(f)(4); 36 C.F.R. § 219.10(f) (1982); 36 C.F.R. § 219.5(a)(2)(ii) (2012).

146

Sensitive species

Neither of the action alternatives will meet Forest Plan guidelines for canopy cover in northern goshawk habitat. In ponderosa pine forest Post-Fledging Family Areas (“PFA”), “Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+% and 2/3 50+%. Mature (VSS 5) and old forest (VSS 6) should average 50+%.” Forest Plan at 58. In mixed conifer forest within PFA, “Canopy cover for mid-aged (VSS 4) to old forest (VSS 6) should average 60+%.” *Id.* According to the Silviculture Specialist Report (“SSR”), canopy cover “can be related to basal area,” and it states the following assumption: “40% canopy cover ≈ 54 ft.² basal area, 50% canopy cover ≈ 70 ft.² basal area, 60% canopy cover ≈ 93 ft.² basal area.” SSR at A-3. The existing condition in PFA is 66-86 ft.² BA, which equates to approximately 50 to 58 percent canopy cover. *Compare id.* at 18 (Table 4); A-3 (figure depicting relation of basal area to canopy cover). The desired condition in PFA is 70-80 ft.² BA, which would provide approximately 51 to 55 percent canopy cover. *Id.* Therefore, PFA habitat currently lacks the required canopy cover, and proposed logging will fail to meet plan guidelines requiring >60 percent canopy cover in mixed-conifer PFA and one-third of VSS 4 in ponderosa pine PFA. The Forest Service substitutes its desired condition for the Forest Plan canopy cover guidelines. *See* DEIS at 116 (“Desired condition for average post-treatment canopy cover for PFAs is 50–60 percent on VSS 4 and 50 percent in VSS 5 and VSS 6; and average canopy cover at 40 percent in VSS 4, VSS 5, and VSS 6 (Richardson et al., 2011 and Richardson et al., 2012)”). This constitutes a *de facto* amendment to the Forest Plan without observance of required procedures.

147

Alternative B would amend Forest Plan standards and guidelines for management of northern goshawk habitat in other ways. In particular, it would:

148

- Introduce the novel concept of “interspace,” defined as “open space between tree groups intended to be managed for grass–forb–shrub vegetation during the long term.” *Id.* at 25.
- Distinguish forest vegetation structural stages (“VSS”) from interspace. *See id.* 26 (“For the areas managed for tree crown development, the distribution of vegetation structural stages for ponderosa pine, mixed conifer, and spruce–fir forests is 10 percent grass–forb–shrub (VSS 1), 10 percent seedling–sapling (VSS 2), 20 percent young forest (VSS 3), 20 percent mid-aged forest (VSS 4), 20 percent mature forest (VSS 5), and 20 percent old forest (VSS 6)”).
- Require forest openings on 20 to 40 percent of the project area comprised of VSS 1 (grass/forb/shrub), VSS 2 (seedling/sapling) and interspace. *See id.* 26 (“Manage to

“appropriate public notification and satisfactory completion of NEPA procedures.”); 36 C.F.R. § 219.5(a)(2)(ii) (2012) (stating that the process for amending a Forest Plan must include consideration of the proposed amendment’s environmental effects, providing an opportunity to comment, and providing an opportunity to object before it is approved)

146, continued

Appendix E. Comment Letters Received on the DEIS

develop and maintain 20–40 percent of the uneven-aged stand as canopy gaps (VSS 1 and VSS 2) and interspaces between tree groups”); *compare* Forest Plan at 56 (“The distribution of vegetation structural stages [...] is 10% grass/forb/shrub (VSS 1), 10% seedling-sapling (VSS 2), 20% young forest (VSS 3), 20% mid-aged forest (VSS 4), 20% mature forest (VSS 5), 20% old forest (VSS 6)”).

- Allow created forest openings to exceed four (4) acres. *See* DEIS at 28.
- Allow removal of VSS 6 (old forest) where it is currently deficient. *See id.* 26.
- Shift the spatial scale of VSS definition and application of canopy cover guidelines from “stand” (>10 acres) to “group” (0.1 to 1 acre) and exclude interspace. *See id.* 27 (“Canopy cover is evaluated with vertical crown projection within mid-aged to old forest structural stage groups (VSS 4, VSS 5, and VSS 6) and not within grass–forb–shrub to young forest structural stage groups (VSS 1, VSS 2, and VSS 3) or in interspaces, natural meadows, and grasslands, or other areas not managed for forest conditions”); *compare* Forest Plan at 57 (“Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass–forb–shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3)”).

The plan amendments described above come from the February 23, 2007, *Implementation Guide, Region 3, Northern Goshawk Standards and Guidelines* (USDA 2007b) – “New Goshawk Guidelines”). The New Goshawk Guidelines introduce “interspace,” to be managed in perpetuity as “non-forest” situated “between groups.” *See* DEIS at *iv* (“Desired conditions call for uneven-aged forests across the project area that exhibit a variety of forest densities, spatial arrangements, age/structure conditions, and interspaces between groups”); 9 (interspaces “are to be managed as non-forest areas”). More, they shift the scale of canopy cover measurement and retention in VSS 4 (mid-aged forest), 5 (mature forest) and 6 (old forest) from “site” or “stand” to the “group” scale, which is significantly less extensive. *See* DEIS at 25 (defining “minimum stand mapping size” as 10 acres); 112 (“a stand-level measurement of canopy cover is not applicable”); 115 (under Alternative B, “Tree groups would be maintained by VSS class, ranging from a quarter acre to 1 acre in size and generally in groups of 4–20 trees (0.1 acre basis”).

149

Under the current Forest Plan, six VSS stages comprise 100 percent of all forest lands on landscapes outside of PFA. *See* Forest Plan at 56 (“The distribution of vegetation structural stages for ponderosa pine, mixed conifer and spruce-fir forests is 10% grass/forb/shrub (VSS 1), 10% seedling-sapling (VSS 2), 20% young forest (VSS 3), 20% mid-aged forest (VSS 4), 20% mature forest (VSS 5), 20% old forest (VSS 6). NOTE: The specified percentages are a guide and actual percentages are expected to vary + or – up to 3%”).

150

The plan amendment proposed in Alternative B would limit the six VSS to “areas managed for tree crown development” on approximately 80 percent of landscapes outside of PFA. *See* DEIS at 26. Interspaces would comprise “non-forest” separate from the six VSS stages managed for tree crown development, including VSS 1 (grass/forb/shrub), on approximately 20 percent of landscapes outside PFA. *Id.* (“Manage to develop and maintain 20–40 percent of the uneven-aged stand as canopy gaps (VSS 1 and VSS 2) and interspaces between

151

tree groups. Interspaces consist of mixtures of grass, forbs, shrubs, scattered single trees, and small areas of nonforested conditions”) 52-53 (“A primary objective is the restoration of sustainable forest mosaic patterns with canopy gaps and forest openings totaling 20–40 percent of stand areas to facilitate uneven-aged forest stand dynamics and other ecological functions. One element of the proposed treatments is the initiation of conditions conducive to regenerate or develop VSS 1 and 2 classes (establish or release existing seedlings/saplings), totaling approximately 20 percent of the open area [...] The remainder of the openness created by treatment would be interspaces (up to another 20 percent) to provide for other ecological functions”). If implemented on the ground, the plan amendments would significantly increase logging in goshawk habitat by doubling the extent of forest openings anticipated in the environmental analysis supporting the Forest Plan (USDA 1996a).

In the current Forest Plan, canopy cover guidelines apply to VSS 4 (mid-aged forest dominated by trees 12- to 18-inches diameter), VSS 5 (mature forest dominated by trees 18- to 24-inches diameter) and VSS 6 (old forest dominated by trees larger than 24-inches diameter). *See* Forest Plan at 57 (“Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass/forb/shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3”). It applies different canopy cover requirements to different forest types in different habitat settings. For example, in ponderosa pine forest on landscapes outside PFA (“forage areas”), the Forest Plan requires greater than 40 percent canopy cover in VSS 4, 5 and 6. *Id.* Within ponderosa pine PFA, it provides greater than 60 percent cover in one-third of VSS 4 and >50 percent cover in the remaining two-thirds of VSS 4, as well as >50 percent cover in VSS 5 and 6. *Id.* at 58. Mixed conifer forest merits increased canopy cover. In forage areas, “Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+% and 2/3 40+%, mature forest (VSS 5) should average 50+%, and old forest (VSS 6) should average 60+%.” *Id.* at 57. In PFA, “Canopy cover for mid-aged (VSS 4) to old forest (VSS 6) should average 60+%.”

Additionally, current Forest Plan standards require evaluation of goshawk habitat structure at three spatial scales, with the smallest being the scale of “site.” Forest Plan at 56 (management scale). The Forest Plan also states that the distribution of VSS and tree density is a product of “site quality.” *Id.* Those standards originate from the 1996 Plan Amendment (USDA 1996b). Among the “Key Standard and Guideline Terms” in the glossary of the Final Environmental Impact Statement (“FEIS” – USDA 1996a), the Forest Service defines “site” the same as “stand.” FEIS at 266. Stands (or sites) range in size from 30 to 100 acres (USDA 2006: 8 – Table 4) (describing “sites up to 100 acres in size”). Additionally, “canopy” is defined as a layer of foliage “in a forest stand.” FEIS at 262. In contrast, “group” is defined to be as small as two trees. *Id.* at 263. The Forest Plan makes no provision for measurement of canopy cover at the group scale.

The existing canopy cover guidelines originate from management recommendations of Reynolds and others (1992), which the Forest Service incorporated into the Forest Plan with the 1996 Plan Amendment (USDA 1996a). *See* Forest Plan at 55 (“Refer to USDA Forest Service General Technical Report RM-217 entitled ‘Management Recommendations for the Northern Goshawk in the Southwestern United States’ for scientific information on goshawk ecology and management which provide the basis for the management guidelines”); *also see* USDA (1996a: 22) (referencing 1992 goshawk recommendations). The recommendations define VSS as a

Appendix E. Comment Letters Received on the DEIS

forest stand (Reynolds et al. 1992: 14 (Table 5), 22-24, 27-28, 79, 81 (“VSS is a method of describing the growth stages of a stand of living trees”), 90 (“If the majority of stems of a stand ... were in the 12-18 inch diameter class, the stand would be classified as a VSS 4”); *also see* DEIS at 25 (defining “minimum stand mapping size” as 10 acres).

In contrast, the New Goshawk Guidelines (USDA 2007b: 8) state, “Canopy cover is measured from the outermost edge of tree crowns within a group or clump of trees. It is not measured as a percentage of cover across a stand or project area.” More, “ID Teams have interpreted the measurement of canopy cover differently in the past. Plan Amendment direction is to measure canopy cover as defined above (dripline to dripline of the group)” (USDA 2007: 9). The Forest Service seeks in the New Goshawk Guidelines to measure and retain canopy cover at spatial scales as small as 0.1-acre:

156

Spacing and number of trees per and 1/10th acre group by VSS class to meet canopy cover requirements have been developed and may be found in marking guide templates. There are links to the templates at the end of this document in the Tools section. The following diagram shows different VSS class groups and general numbers of trees per group required to meet canopy cover requirements. Generally, smaller VSS size class groups should contain more trees per 1/10th acre equivalent.

(USDA 2007b: 9-10).

Notes from a Forest Service planning meeting held on November 3-5, 2006, in Flagstaff, Arizona, clarify the agency’s intention to deviate from the scientific basis of the Forest Plan with a new interpretation of standards and guidelines for VSS and canopy cover.¹² “The VSS class applies to the sub-stand-size groups which should not exceed 2-4 acres in size. Management recommendations are to develop / maintain groups from 1/10 to ¼ acres in size.” The notes define “clump/group” as composing two zones including a “canopy zone” occupied by trees, which “is the basis for measurement of stocking guides, canopy cover, and group area (i.e. 1/10 ac.).” And they state, “Do not count interspaces between groups.”

The Arizona Game and Fish Department summarized the significance of the changes proposed by the New Goshawk Guidelines in comments to the Coconino National Forest on an Environmental Assessment for the Jack Smith Project¹³:

157

All previous FS-GFFP planning projects have planned canopy cover reduction levels at the stand level. In this PA, the FS is proposing target canopy cover ranges at the group level as opposed to the stand level ... The Department finds that this change has the potential to significantly reduce the amount of forest cover within treated areas ... Under this proposal, overall canopy cover in this management zone could be reduced to as little as 10% canopy cover if measured across the stand ... By changing the canopy cover targets from the stand level to the group level, the Department is concerned that the FS

¹² Notes of the November 3-5, 2006, Forest Service planning meeting in Flagstaff, AZ., are attached to this letter for convenience.

¹³ The June 5, 2007, letter from the Arizona Game and Fish Department to the Coconino National Forest regarding the Jack Smith Project is attached to this letter for convenience.

Appendix E. Comment Letters Received on the DEIS

may not be meeting the habitat requirements for [goshawk prey species], and also may not be meeting the habitat requirements for the northern goshawk per the 1996 Forest Plan Amendment.

The Department also reported on the New Goshawk Guidelines to the Arizona Game and Fish Commission in a briefing on July 27, 2007, and stated that its concerns apply to national forests in the Southwest and not only to a single Forest Service action¹⁴:

The Department has concern about a shift in how the Forest Service implements their own Northern Goshawk Guidelines within the current Forest Plan. One of the primary concerns the Department has with the new interpretation is that forest thinning treatments have the potential to reduce overall tree canopy cover to levels that may not meet the habitat needs for wildlife within those treated areas. The Department has vetted these concerns at several meetings and has been unable to resolve these concerns with the Forest Service. All previous Forest Service planning projects have planned canopy cover reduction levels at the stand level. Under the new interpretation of the goshawk guidelines, the Forest Service is proposing target canopy cover ranges at the group level as opposed to the stand level (where a group is defined as an aggregation of one or more clumps of trees of varying age and size interspersed with openings).

The Management Recommendations for the Northern Goshawk in the Southwestern United States (GTR-RM-217) defines northern goshawk habitat through the structural habitat attributes of 14 of the hawk's prey species. The canopy cover data described for these prey species, and for the northern goshawk, were measured at the stand level – not the tree group level. By changing the canopy cover targets from the stand level to the group level, the Department is concerned that the Forest Service may not be meeting the habitat requirements of those 14 wildlife species, and also may not be meeting the habitat requirements for the northern goshawk per the 1996 Forest Plan Amendment.

Related to the new Forest Service guidance for implementing the northern goshawk guidelines, the Department is also concerned that the Forest Service proposed treatment might trend toward even-aged group selection over time. For example, the Forest Service proposed to regenerate groups of VSS 1 and 2 while reducing canopy cover for tree groups of other VSS classes. Managing tree groups by VSS class comes across as even-aged tree group management. However, scientific literature describing the historic range of variability in southwestern ponderosa pine does not find that tree groups were even aged. Rather, the literature suggests that tree groups were often comprised of multi-aged trees intermingled intimately in the same area (Long and Smith 2000, Mast et al. 1999, White 1985). Uneven aged tree composition within groups is important for vertical structure and provides forage and breeding habitat for songbirds as well as thermal cover for raptors as well as deer and elk.

Department personnel from Regions I and II, Research Branch, Nongame Branch and Habitat Branch attended a workshop on the new interpretation in Flagstaff including a field trip to stands marked under the new interpretation. All the Department personnel who attended the workshop were concerned that the degree of openness permitted under

¹⁴ Notes of the July 27, 2007, Arizona Game and Fish Commission briefing are attached to this letter for convenience.

Appendix E. Comment Letters Received on the DEIS

the new interpretation because of its potential to negatively impact forest wildlife including goshawk, squirrel, bear, turkey, and dense forest songbirds.

The Forests have decided that they do not need to do any NEPA on these changes because they believe it is simply clarification of existing guidance. The Department is of the opinion that the Forests should have gone through the NEPA process, or at a minimum consulted with the state and federal fish and wildlife agencies. Consultation, or a forum for discussion, is necessary between the Forests and the Department to resolve these concerns.

Furthermore, professional opinion within the Forest Service agrees that the New Goshawk Guidelines would significantly change management of goshawk habitat with potentially significant implications for vegetation treatment intensities and retention of forest structure:

As much as we can, we are adapting current prescriptions to take into account interspaces between groups and we have adjusted these prescriptions to consider group size and how we look at groups ... The original analysis and documentation generally looked at how we interpreted the goshawk guidelines in the forest plan in a different manner as are currently looking at them. ... This will lead to a much more open forest over time than previous interpretations of the goshawk recommendations in the forest plans would have.

Herron (2006).¹⁵ Managing goshawk habitat within clumps and groups, instead of at site or stand scales, leads to significantly different outcomes on the ground than what the Forest Service previously disclosed in NEPA analysis supporting the Forest Plan (USDA 1996a). For example, assuming a residual canopy cover within groups of 50 percent, and if groups occupy 50 percent of the stand, canopy cover at the stand scale will be 25 percent (Table CBD-1 – shown below). To prevent this outcome across the project area, the Forest Plan requires maintenance of canopy cover in northern goshawk habitat at stand scales.

The New Goshawk Guidelines and the plan amendments now proposed in Alternative B stray beyond the scope of the FEIS (USDA 1996a) supporting the Record of Decision that authorizes implementation of the Forest Plan (“ROD” – USDA 1996b). *See* FEIS at 24 (“Currently, the best guidelines we have for desired conditions for the distribution of structural stages are the goshawk guidelines. These guidelines recommend for a foraging area a vegetation structural stage distribution of 20% in early, 40% in mid and 40% in late structural stage). In that FEIS, the Forest Service clearly intended to provide wildlife habitat associated with herbaceous and shrub-dominated vegetation communities within the VSS classification system:

Some species totally depend on one or more of these cover types and respective vegetation structural stages (VSS), while others are casual uses. Regardless of the degree of use, it is important to maintain a diversity of cover types and vegetation structural stages across landscapes to sustain healthy wildlife populations and communities.

172

This programmatic analysis of the alternatives is primarily based on three broad habitat characteristics that can be evaluated at the programmatic EIS level. These three wildlife

¹⁵ Comments of a Kaibab National Forest silviculturalist regarding implementation of the new goshawk guidelines are attached to this letter for convenience.

Appendix E. Comment Letters Received on the DEIS

habitat characteristics are cover type, vegetation structural stages (VSS), and forage production. Cover type and VSS represent the overstory characteristics of the habitat and forage production represents the understory. The structural stages are grouped by early, mid and late stages (VSS 1&2, VSS 3&4, and VSS 5&6, respectively).

Id. at 28-29. The agency accounted for environmental effects of implementing the Forest Plan on wildlife species that require “forage production” as a critical element of habitat. *See id.* 30. (“The alternatives that would produce the most forage, in decreasing order, are E, A, F, C, D and G. Since understory habitat is important for many of the non-TES wildlife species and there is a need to increase understory habitats” [sic]).

172, continued

Table CBD-1. Prescription intensities and canopy cover percentages measured at stand and group scales.

157, continued

Prescription Intensities: % of Stand in Interspace / Groups	Stand-scale Canopy Cover at 50% Canopy Retention "Within Groups Only"	Stand-scale Canopy Cover at 40% Canopy Retention "Within Groups Only"	Stand-scale Canopy Cover at 50% Canopy Retention "Within VSS 4, 5 and 6 Groups Only"	Stand-scale Canopy Cover at 40% Canopy Retention "Within VSS 4, 5 and 6 Groups Only"
100 / 0	0	0	Cannot Predict	Cannot Predict
90 / 10	5	4	Cannot Predict	Cannot Predict
80 / 20	10	8	Cannot Predict	Cannot Predict
70 / 30	15	12	Cannot Predict	Cannot Predict
60 / 40	20	16	Cannot Predict	Cannot Predict
50 / 50	25	20	Cannot Predict	Cannot Predict
40 / 60	30	24	Cannot Predict	Cannot Predict
30 / 70	35	28	Cannot Predict	Cannot Predict
20 / 80	40	32	Cannot Predict	Cannot Predict
10 / 90	45	36	Cannot Predict	Cannot Predict
0 / 100	50	40	Cannot Predict	Cannot Predict

Prescription Intensities: % of Stand in Interspace / Groups	% of Area in VSS1 (Plan Direction is 10%)	% Area in VSS2 (Plan Direction is 10%)	% Area in VSS3 (Plan Direction is 20%)	% Area in VSS4 (Plan Direction is 20%)	% Area in VSS5 (Mature Forest, Plan Direction is 20%)	% Area in VSS6 (Old Forest, Plan Direction is 20%)
100 / 0	100	0	0	0	0	0
90 / 10	91	1	2	2	2	2
80 / 20	82	2	4	4	4	4
70 / 30	73	3	6	6	6	6
60 / 40	64	4	8	8	8	8
50 / 50	55	5	10	10	10	10
40 / 60	46	6	12	12	12	12
30 / 70	37	7	14	14	14	14
20 / 80	28	8	16	16	16	16
10 / 90	19	9	18	18	18	18
0 / 100	0	10	20	20	20	20

The Forest Service carried forward the analysis quoted above into Appendix C of the 1996 ROD (USDA 1996b), which contains the following management standard for goshawk habitat: “Sustain a mosaic of vegetation densities (overstory and understory), age classes and species composition across the landscape. Provide foods and cover for goshawk prey.” To meet that standard, the Forest Plans incorporate the *Management Recommendations for the Northern Goshawk in the Southwestern United States* (Reynolds et al. 1992), which state on page 15:

Appendix E. Comment Letters Received on the DEIS

We designed foraging areas consisting of forest conditions that would provide a high overall diversity and abundance of prey [...] Sufficient prey habitats are provided so there is food to support goshawks in all seasons, especially during winter when fewer prey are available, and in years when prey populations are low due to factors such as drought or deep snow cover. Because no single species will be abundant enough to support goshawks, especially during the winter, habitats for all 14 prey species are provided.

159

In PFA, “prey habitat should be intermixed with dense hiding cover,” and features of prey habitat in PFA include “small (<2 acre) openings in the tree canopy to produce herbaceous and shrubby foods for the herbivorous prey” (Reynolds et al. 1992: 15-16). Those “openings” constitute VSS 1. *See* ROD at 92 (defining VSS 1 as “grass/forb/shrub”). In forage areas outside of PFA, the Forest Service applied the management recommendations to provide for a diversity of habitat conditions required by goshawk prey species. *See* Reynolds and others (1992: 16-17) (summarizing “the importance of snags, downed logs, openings, large trees, herbaceous and shrubby understories, and interspersions of VSS to the selected prey species of the goshawk”). The 1992 recommendations and the Forest Plans assume that “Openings, and associated herbaceous and shrubby vegetation, provide important food and cover for a number of goshawk prey species.” *Id.* at 17. The recommendations also acknowledge that “Interspersions measures the degree of intermixing of vegetation structural stages. Only the red squirrel responds negatively to interspersions of structural stages; its populations reach a maximum in unbroken old forests.” *Id.* at 18. Recognizing the importance of “closed forests” to red squirrel and six other goshawk prey species,

[G]oshawk foraging habitat in the three forest types consists of forests with relatively open understories and large trees. Large trees are required for hunting perches, and openness provides opportunity for detection and capture of prey by goshawks. These forests have small to medium openings (<4 acres) and patches of dense mid-aged forests.

Openings are scattered to:

- 1) enhance the availability of food and habitat resources of prey that use them, and
- 2) limit the effect of large openings on the distribution and abundance of prey species that use interior forests.

Id. According to the Forest Service, “Alternative G incorporates the needs of the Mexican spotted owl and northern goshawk. The science behind the needs are contained in two publications, ‘Mexican Spotted Owl Recovery Plan’ and ‘Management Recommendations for the Northern Goshawk in the Southwestern United States’ (GTR RM-217, 1992).” FEIS at 27. Therefore, the Forest Plans provide for goshawk prey species with an assumption that approximately 20 percent of forests will consist of relatively open, early-seral vegetation, including created openings. The Forest Service stated in NEPA analysis that intermixing of the six VSS classes, as prescribed by the Forest Plan standards and guidelines and the scientific recommendations underlying them, will maintain viable populations of goshawk and its prey.

In the Rim Lakes DEIS, the Forest Service proposes a plan amendment that would “Manage to develop and maintain 20–40 percent of the uneven-aged stand as canopy gaps (VSS 1 and VSS 2) and interspaces between tree groups.” DEIS at 26. Creation of interspaces within ponderosa pine stands and counting them separately from VSS 1 and VSS 2 will result in

160

Appendix E. Comment Letters Received on the DEIS

significantly less closed-canopy ponderosa pine forest in goshawk habitat than expected by the NEPA analysis supporting the Forest Plan.

161

Even if the proposed amendments to the Forest Plan are “non-significant” at the scale of the project area, they may nonetheless significantly impact goshawk and its prey species in ways never before disclosed in NEPA analysis. Before implementing the project, the Forest Service is required to study and disclose effects of this new management strategy on goshawk and the 14 prey species that were considered in the 1996 FEIS.

162

The proposed amendments are significant because they would implement a broad policy shift for the Southwestern Region. The Forest Service is implementing the New Goshawk Guidelines, including creation of non-forest “interspaces” and retention of canopy cover at sub-site scales, through project-specific Forest Plan amendments region wide. Similar plan amendments are proposed in the Four Forest Restoration Initiative (“4FRI”) Project affecting about 45,000 acres of goshawk habitat in the Coconino and Kaibab National Forests; in the Clints Well Project affecting 6,100 acres of goshawk habitat in the Coconino National Forest; and in the Mahan-Landmark Project affecting about 25,000 acres of goshawk habitat in the Coconino National Forest. At some point, the agency will be required to consider how all of these plan amendments coupled with the application of New Goshawk Guidelines throughout the region may affect the significance of each amendment. The DEIS does not consider how the plan amendments in Alternative B may cumulatively impact goshawk or its prey, and limits its analysis solely to the project area.

163

The Center stated in scoping comments on April 30, 2012, that amending the Forest Plan with the New Goshawk Guidelines, as proposed in Alternative B,

introduces completely new concepts that have never before been subject to analysis or disclosure in any impact statement. The Rim Lakes EIS should fully disclose potentially significant direct, indirect and cumulative effects of the forest plan amendment to northern goshawk and the prey species whose viability the Forest Service assumes will be assured by implementation of the standards and guidelines. It also should disclose scientific controversy and uncertainty, unique or unknown risks, and the degree to which the action may be precedent setting.

164

The Forest Service ignored this comment and failed to address goshawk or prey species viability, let alone controversy, uncertainty, risk or precedent. NEPA forbids this uninformed approach to the sea-change in management of goshawk habitat contemplated by Alternative B. 40 C.F.R. §§ 1502.16; 1508.27.

165

Furthermore, continued implementation the goshawk management recommendation (Reynolds et al. 1992) is scientifically controversial as a means of insuring population viability for goshawk and prey species. The Coconino Forest Biologist wrote to her colleagues that a study of influences of ponderosa pine forest structure on northern goshawk reproduction conducted by Beier and others (2008) “sort of rocks the world for the 1996 goshawk

Appendix E. Comment Letters Received on the DEIS

guidelines.”¹⁶ Beier and others (2008) detected a negative correlation of goshawk breeding productivity with territories that were treated by logging consistent with the recommendations (Reynolds et al. 1992). Beier and Ingraldi (2012) further discussed the implications of those findings regarding Forest Plan implementation and goshawk viability. Those findings agree with observations of Silver and others (unpubl. – available on request), who found evidence of the same phenomenon in the Kaibab National Forest, and stated, “Goshawks are known to be adapted to hunt in and to prefer closed forests... [L]ogging continues to negatively impact goshawk reproduction, regardless of the guidelines.”¹⁷

Allen’s lappet browed bat is among the rarest of North American bats and it relies on large ponderosa pine snags with exfoliating bark for maternal roosting habitat (Rabe et al. 1998, Solvesky 2007). Animals have been captured and studied within ¼-mile of the Rim Lakes Project area. Human disturbance of roost habitat (i.e., snag destruction) can cause abandonment and negatively impact reproductive success. Use of tree roosts is common, so the bat is vulnerable to effects of logging and prescribed fire.

Large snags that supply critical habitat for Allen’s bat may be destroyed by mechanical fuel treatments (Hunter et al. 2007). Prescribed fire may create new coarse woody structure by killing live trees, but any gain in new snags as a result of fire treatments is unlikely to offset their loss as existing coarse wood is irretrievably lost (Randall-Parker and Miller 2002). Rabe and others (1998) report the scarcity of snag habitat at a landscape scale in northern Arizona, and caution that snags are not equally suitable for use by bats. The project area is deficient in snag habitat compared to Forest Plan standards and guidelines.

Neither of the action alternatives would meet Forest Plan standards and guidelines for snag habitat in ponderosa pine forest. *See* DEIS at 51 (Tables 11, 12, 13). Only Alternative C would meet comply with the Forest Plan 20 years after project implementation. *Id.* 52 (Table 14). Any destruction of snag habitat in the project is likely to have cumulatively significant impacts on sensitive wildlife, coarse wood recruitment and forest soils.

Indicator species

The Wallow fire significantly changed forest-wide habitat and population trends of management indicator species (“MIS”). *See* 2011 EA at 147 (footnote 10). Specifically, it changed forest-wide trends for northern goshawk, Merriam’s turkey, pygmy nuthatch, Mexican spotted owl and red squirrel. The Forest Service has never monitored populations of some MIS. In scoping comments, the Center asked the agency to “identify methods and information used to determine if the Rim Lakes Project will maintain viability” of MIS.

¹⁶ See electronic mail of Cecelia Overby re: “Beier et al. paper,” Feb. 26, 2008 (“The authors conclude that the Forest Service should reconsider its decision to apply the guidelines to most of the forested lands in the region. Wow.”).

¹⁷ CBD analysis of Forest Service data secured via FOIA citing the “analysis 2005 work 010506.”

Appendix E. Comment Letters Received on the DEIS

That information request is particularly important for red squirrel, which exclusively uses mature and old forest habitat. The Forest Plan standards and guidelines for management of northern goshawk habitat specifically provide for red squirrel by ensuring that 20% of landscapes will be maintained in older forest conditions. Alternative B in the DEIS would change habitat availability for red squirrel by (1) introducing interspace on 20% of the project area, (2) reducing VSS to 80% of the project area (and thereby the proportion of older forest); (3) shifting canopy cover retention to small group scales; (4) allowing removal of VSS 6 where it is currently deficit; and (5) allowing created openings to exceed four acres in size. The Forest Service never considers effects of the plan amendments on this late-seral obligate species.

168

Dwarf mistletoe

Forest Service research demonstrates the positive contributions of dwarf mistletoe to old growth forest and wildlife habitat and food resources (e.g., Hawksworth and Wiens 1996). Tree mortality caused by dwarf mistletoe infection creates natural openings and structural heterogeneity, which are among the desired conditions for the Rim Lakes Project area. Trees infected with dwarf mistletoe can directly or indirectly benefit wildlife (Filip 2005). Many vertebrate animal species consume mistletoe shoots and fruits, and use brooms for cover and as nesting sites (Hawksworth and Wiens 1996). Clary and Larson (1971) found that in certain years, ponderosa pine stands with dwarf mistletoe shelter significantly more deer than stands without dwarf mistletoe. Tassel-eared squirrel, northern goshawk and Mexican spotted owl prefer spatially heterogeneous patches of habitat that include large trees, dense canopy and diverse structure including coarse wood and mistletoe brooms. Those animals are threatened by large fires and by habitat degradation from silviculture (Beier and Machinski 2003). The Center presented this information in scoping comments and the Forest Service ignored it in the DEIS, which gives no attention to mistletoe-wildlife relationships. It only considers mistletoe as a “disease,” and focuses narrowly on ways to minimize its spread among trees.

169

170

Please notify me at the addresses shown below of all activity associated with the Rim Lakes Project. I wish to participate at every opportunity.

Sincerely,



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REFERENCES

- Abella, S.R., P.Z. Fulé and W.W. Covington. 2006. Diameter caps for thinning southwestern ponderosa pine forests: viewpoints, effects, and tradeoffs. *Journal of Forestry* (December):407-14.
- Agee, J.K. 1996. The influence of forest structure on fire behavior. Pp. 52-68 in: J.W. Sherlock (chair). *Proc. 17th Forest Vegetation Management Conference*. 1996 Jan. 16-18: Redding, CA. Calif. Dept. Forestry and Fire Protection: Sacramento.
- Agee, J.K., and C.N. Skinner. 2005. Basic principles of forest fuel reduction treatments. *Forest Ecology and Management* 211:83-96.
- Allen, C.D. M.A. Savage, D.A. Falk, K.F. Suckling, T.W. Swetnam, T. Schulke, P.B. Stacey, P. Morgan, M. Hoffman, and J.T. Klinger. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: a broad perspective. *Ecological Applications* 12:1418-1433.
- Amaranthus, M.P., D.S. Parrish, and D.A. Perry. 1989. Decaying logs as moisture reservoirs after drought and wildfire. Pp. 191-194 in: E.B. Alexander (Ed.). *Proceedings of Watershed '89: Conference on the Stewardship of Soil, Air, and Water Resources*. USDA For. Serv. Alaska Region. RIO-MB-77. Anchorage, AK.
- AGFD (Arizona Game & Fish Dept.). 2007. Region II Commission Briefing. July 27. 9 pp.
- Arno, S.F. 2000. Fire in western ecosystems. Pp. 97-120 in: J.K. Brown and J.K. Smith (Eds.). *Wildland Fire in Ecosystems, Vol. 2: Effects of Fire on Flora*. USDA For. Serv. Gen. Tech. Rep. RMRS-42-vol.2. Ogden, UT.
- Arnold, J.F. 1950. Changes in ponderosa pine bunchgrass ranges in northern Arizona resulting from pine regeneration and grazing. *Journal of Forestry* 48:118-126.
- Backer, D.M, S.A. Jensen, and G.R. McPherson. 2004. Impacts of fire suppression activities on natural communities. *Conservation Biology* 18:937-946.
- Beier, P., and J. Maschinski. 2003. Threatened, endangered, and sensitive species. Pp. 206-327 in: P. Friederici (Ed.). *Ecological Restoration of Southwestern Ponderosa Pine Forests*. Island Press: Washington, D.C.
- Beier, P., E.C. Rogan, M.F. Ingraldi and S.S. Rosenstock. 2008. Does forest structure affect reproduction of northern goshawks in ponderosa pine forests? *Journal of Applied Ecology* 45: 342-350.
- Beier, P., and M.F. Ingraldi. 2012. There is no evidence that the Forest Service's goshawk recommendations improve goshawk nest productivity. *Wildlife Society Bulletin*; DOI: 10.1002/wsb.122. 2 pp.

Appendix E. Comment Letters Received on the DEIS

- Brown, R.T., J.K. Agee, and J.F. Franklin. 2004. Forest restoration and fire: principles in the context of place. *Conservation Biology* 18:903-912.
- Clary, W.P., and F.R. Larson. 1971. *Elk and Deer Use Are Related to Food Sources in Arizona Ponderosa Pine*. USDA For. Serv. Rocky Mtn. Res. Sta. Res. Note RM-RN-202. Fort Collins, CO. 4 p.
- Conklin, D.A. and M.L. Fairweather. 2010. *Dwarf Mistletoes and Their Management in the Southwest*. USDA For. Serv. R3-FH-10-01. Albuquerque, NM. 23 pp.
- Cooper, C.F. 1960. Changes in vegetation, structure and growth of southwestern pine forests since white settlement. *Ecological Monographs* 30:129-164.
- Countryman, C.M. 1956. Old-growth conversion also converts fire climate. *Fire Control Notes* 17(4):15-19.
- Covington, W.W., and M.M. Moore. 1994. Southwestern ponderosa forest structure: Changes since Euro-American settlement. *Journal of Forestry* 92:39-47.
- Covington, W.W., P.Z. Fulé, M.M. Moore, S. Hart, T. Kolb, J. Mast, S. Sackett, and M. Wagner. 1997. Restoring ecosystem health in ponderosa pine forests of the southwest. *Journal of Forestry* 95: 23-29.
- Covington, W., R.L. Everett, R.W. Steele, L.L. Irwin, T.A. Daer, and A. D. Auclair. 1994. Historical and anticipated changes in forest ecosystems of the Inland West of the United States. Pp. 13-63 in: R.N. Sampson and D.L. Adams (Eds.). *Assessing Forest Ecosystem Health of the Inland West*. The Hawthorn Press: New York.
- DellaSala, D.A., J.E. Williams, C.D. Williams and J.F. Franklin. 2004. Beyond smoke and mirrors: a synthesis of fire policy and science. *Conservation Biology* 18: 976-986.
- Diggins, C., P.Z. Fulé, J.P. Kaye and W.W. Covington. 2010. Future climate affects management strategies for maintaining forest restoration treatments. *International Journal of Wildland Fire* 19: 903-13.
- Dodd, N.L. 2003. *Landscape-scale habitat relationships to tassel-eared squirrel population dynamics in Arizona: index techniques and relationships to habitat condition*. Arizona Game and Fish Department Technical Guidance Bulletin 6: Phoenix, AZ.
- Dodd, N.L., J.S. States, and S.S. Rosenstock. 2003. Tassel-eared squirrel population, habitat conditions, and dietary relationships in north-central Arizona. *Journal of Wildlife Management* 67:622-633.
- Dodd, N.L., S.S. Rosenstock, C.R. Miller, and R.E. Schweinsburg. 1998. *Tassel-eared squirrel population dynamics in Arizona: index techniques and relationships to habitat condition*. Arizona Game and Fish Department Technical Report 27: Phoenix, AZ.

Appendix E. Comment Letters Received on the DEIS

- Elliot, W.J. 2010. Effects of forest biomass use on watershed processes in the western United States. *Western Journal of Applied Forestry* 25: 12-17.
- Falk, D.A. 2006. Process-centered restoration in a fire-adapted ponderosa pine forest. *Journal for Nature Conservation* 14:140-151.
- Fiedler, C.E., and C.E. Keegan. 2002. Reducing crown fire hazard in fire-adapted forests of New Mexico. Pp. 29-38 in: P.N. Omi and L.A. Joyce (Tech. Eds.). *Fire, Fuel Treatments, and Ecological Restoration: Conference Proceedings*. 2002 April 16-18: Fort Collins, CO. USDA For. Serv. Rocky Mtn. Res. Sta. Proc. RMRS-P-29. Fort Collins, CO.
- Filip, G.M. 2005. Diseases as agents of disturbance in ponderosa pine. Pp. 227-232 in: M.W. Ritchie, D.A. Maguire, and A. Youngblood (Tech. Coord.). *Proc. Symp. on Ponderosa Pine: Issues, Trends, and Management*. 2004 Oct. 18-21: Klamath Falls, OR. USDA For. Serv. Pac. So. Res. Sta. Gen. Tech. Rep. PSW-GTR-198. Albany, CA.
- Finney, M.A. 2001. Design of regular landscape fuel treatment pattern for modifying fire growth and behavior. *Forest Science* 47:219-228.
- Flannigan, M.D., B.J. Stocks, and B.M. Wotton. 2000. Climate change and forest fires. *The Science of the Total Environment* 262:221-229.
- Friederici, P. (Ed.). 2003. *Ecological Restoration of Southwestern Ponderosa Pine Forests*. Island Press: Washington, DC.
- Forest Ecosystem Restoration Analysis (ForestERA) Project. 2008. *Analysis of Small-Diameter Wood Supply in Northern Arizona: Final Report*. Center for Environmental Sciences and Education, Northern Arizona Univ.: Flagstaff. Summary available at: http://www.forestera.nau.edu/docs/1_ForestERA_WoodSupplyProposalInformation.pdf
- Forest Ecosystem Restoration Analysis (ForestERA) Project and Ecological Restoration Institute (ERI). 2004. *First Western Mogollon Plateau Adaptive Management Assessment Report*. Center for Environmental Sciences and Education, Northern Arizona Univ.: Flagstaff.
- Forest Ecosystem Restoration Analysis (ForestERA) Project and Ecological Restoration Institute (ERI). 2005. *White Mountains Landscape Assessment Data Atlas*. Center for Environmental Sciences and Education, Northern Arizona Univ.: Flagstaff.
- Fulé, P.Z., J.P. Roccaforte and W.W. Covington. 2007. Posttreatment tree mortality after ecological restoration, Arizona, United States. *Environmental Management* 40:623-34.
- Fulé, P.Z., J.E. Crouse, T.A. Heinlein, M.M. Moore, W.W. Covington and G. Verkamp. 2003. Mixed-severity fire regime in a high-elevation forest of Grand Canyon, Arizona, USA. *Landscape Ecology* 18:465-86.

Appendix E. Comment Letters Received on the DEIS

- Fulé, P.Z., W.W. Covington, and M.M. Moore. 1997. Determining reference conditions for ecosystem management of Southwestern ponderosa pine forests. *Ecological Applications* 7:895-908.
- Graham, R.T. (Ed.). 2003. *Hayman Fire Case Study*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RMRS-GTR-114. Ogden, UT.
- Graham, R.T., S. McCaffrey, and T.B. Jain (Tech. Eds.). 2004. *Science Basis for Changing Forest Structure to Modify Wildfire Behavior and Severity*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RMRS-120. Ft. Collins, CO.
- Graham, R.T., A.E. Harvey, T.B. Jain, and J.R. Tonn. 1999. *The Effects of Thinning and Similar Stand Treatments on Fire Behavior in Western Forests*. USDA For. Serv. Pac. Nor. Res. Sta. Gen. Tech. Rep. PNW-GTR-463. Portland, OR.
- Grubb, T.L., J.L. Ganey, and S.R. Masek. 1997. Canopy closure around nest sites of Mexican spotted owls in north-central Arizona. *Journal of Wildlife Management* 61:336-342.
- Gucinski, H., M.J. Furniss, R.R. Ziemer and M.H. Brookes (eds.). 2001. *Forest Roads: A Synthesis of Scientific Information*. USDA For. Serv. Pac. Nor. Res. Sta. Gen. Tech. Rep. PNW-GTR-509. Portland, OR.
- Hampton, H.M., S.E. Sesnie, B.G. Dickson, J.M. Rundall, T.D Sisk, G.B. Snider and J.D. Bailey. 2008. *Analysis of Small-Diameter Wood Supply in Northern Arizona*. Forest Ecosystem Restoration Analysis Project, Center for Environmental Sciences and Education, Northern Arizona University: Flagstaff.
- Hawksworth, F.G. and D. Wiens. 1996. *Dwarf Mistletoes: Biology, Pathology, and Systematics*. USDA For. Serv. Agric. Hndbk. 709. Washington, D.C.
- Hunter, M.E., W.D. Shepperd, J.E. Lentile, J.E. Lundquist, M.G. Andreu, J.L. Butler, and F.W. Smith. 2007. *A Comprehensive Guide to Fuels Treatment Practices for Ponderosa Pine in the Black Hills, Colorado Front Range, and Southwest*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RMRS-GTR-198. Fort Collins, CO.
- Johnson, M.C., D.L. Peterson and C.L. Raymond. 2007. *Guide to Fuel Treatments in Dry Forests of the Western United States: Assessing Forest Structure and Fire Hazard*. USDA For. Serv. Pac. Nor. Res. Sta. Gen. Tech. Rep. PNW-GTR-686. Portland, OR.
- Kaufmann, M.R., W.H. Moir, and W.W. Covington. 1992. Old-growth forests: what do we know about their ecology and management in the Southwest and Rocky Mountain regions? Pp. 1-10 in: M.R. Kaufmann, W.H. Moir, and R.L. Bassett (Eds.). *Old-Growth Forests in the Southwest and Rocky Mountain Regions: Proceedings from a Workshop* (1992). Portal, AZ. USDA For. Serv. Gen. Tech. Rep. RM-213. Fort Collins, CO.

Appendix E. Comment Letters Received on the DEIS

- Keeley, J.E. and P.H. Zedler. 1998. Evolution of life histories in *Pinus*. Pp. 219-250 in: D.M. Richardson (ed.). *Ecology and Biogeography of Pinus*. Press Syndicate of the Univ. Cambridge: Cambridge, U.K.
- Keyes, C.R. and K.L. O'Hara. 2002. Quantifying stand targets for silvicultural prevention of crown fires. *Western Journal of Applied Forestry* 17:101-109.
- Kolb, T.E., P.Z. Fulé, M.R. Wagner and W.W. Covington. 2001. Six-year changes in mortality and crown condition of old-growth ponderosa pines in ecological restoration treatments at the G.A. Pearson Natural Area. Pp. 61-66 in: R.K. Vance et al. (comps.). *Ponderosa Pine Ecosystems Restoration and Conservation: Steps Toward Stewardship*, 25-27 April 2000: Flagstaff, AZ. USDA For. Serv. Proc. RMRS-P-22. Ogden, UT.
- Long, J. and F.W. Smith. 2000. Restructuring the forest: goshawks and the restoration of southwestern ponderosa pine. *Journal of Forestry* 98(8):25-30.
- Luyssaert, S., E.D. Schulze, A. Börner, A. Knohl, D. Hessenmöller, B.E. Law, P. Ciais and J. Grace. 2008. Old-growth forests as global carbon sinks. *Nature* 455:213-15.
- Martinson, E.J., and P.N. Omi. 2003. Performance of fuel treatments subject to wildfires. In: P.N. Omi and L.A. Joyce (Tech. Eds.). *Fire, Fuel Treatments, and Ecological Restoration: Conference Proceedings*. 2002 April 16-18: Fort Collins, CO. USDA For. Serv. Rocky Mtn. Res. Sta. Proc. RMRS-P-29. Fort Collins, CO.
- McCune, B. 1988. Ecological diversity in North American pines. *American Journal of Botany* 75: 353-368.
- McHugh, C.W. and T.E. Kolb. 2003. Ponderosa pine mortality following fire in northern Arizona. *International Journal of Wildland Fire* 12:7-22.
- Naficy, C., A. Sala, E.G. Keeling, J. Graham and T.H. DeLuca. 2010. Interactive effects of historical logging and fire exclusion on ponderosa pine forest structure in the northern Rockies. *Ecological Applications* 20:1851-64.
- Noss, R., P. Beier, W. W. Covington, R. E. Grumbine, D. B. Lindenmayer, J. W. Prather, F. Schmiegelow, T. D. Sisk, and D. J. Vosick. 2006. Recommendations for integrating restoration ecology and conservation biology in ponderosa pine forests of the Southwestern United States. *Restoration Ecology* 14:4-10.
- Omi, P.N., and E.J. Martinson. 2002. *Effect of Fuels Treatment on Wildfire Severity*. Unpubl. report to Joint Fire Science Prog. Western Forest Fire Research Ctr., Colorado St. Univ. Fort Collins, CO. March 25. 36 pp.
- Perry, D.A., H. Jing, A. Youngblood, and D.R. Oetter. 2004. Forest structure and fire susceptibility in volcanic landscapes of the eastern high Cascades, Oregon. *Conservation Biology* 18:913-926.

Appendix E. Comment Letters Received on the DEIS

- Peterson, D.L. and M.C. Johnson. 2007. Science-based strategic planning for hazardous fuel treatment. *Fire Management Today* 67(3):13-18.
- Pollett, J. and P.N. Omi. 2002. Effect of thinning and prescribed burning on crown fire severity in ponderosa pine forests. *International Journal of Wildland Fire* 11:1-10.
- Quigley, T.M., R.W. Haynes and R.T. Graham. 1996. *Disturbance and Forest Health in Oregon and Washington*. USDA For. Serv. Pac. Nor. Res. Sta. Gen. Tech. Rep. PNW-GTR-382. Portland, OR.
- Rabe, M.J. 1998. Characteristics of ponderosa pine snag roots used by reproductive bats in northern Arizona. *Journal of Wildlife Management* 62:612-621.
- Radeloff, V.C., R.B. Hammer, S.I. Stewart, J.S. Fried, S.S. Holcomb, and J.F. McKeefry. 2005. The wildland-urban interface in the United States. *Ecological Applications* 15:799-805.
- Randall-Parker, T., and R. Miller. 2002. Effects of prescribed fire in ponderosa pine on key wildlife habitat components: preliminary results and a method for monitoring. Pp. 823-834 in: W.F. Laudenslayer, et al. (Coord.). *Proc. Symp. Ecology and Management of Dead Wood in Western Forests*. 1999 November 2-4; Reno, NV. USDA For. Serv. Pac. So. Res. Sta. Gen. Tech. Rep. PSW-GTR-181. Albany, CA.
- Reynolds, R.T., R.T. Graham, M.H. Reiser, R.L. Bassett, P.L. Kennedy, D.A. Boyce, G. Goodwin, R. Smith, and E.L. Fisher. 1992. *Management Recommendations for the Northern Goshawk in the Southwestern United States*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RM-GTR-217. Fort Collins, CO.
- Robichaud, P.R., L.H. MacDonald and R.B. Foltz. 2010. Fuel management and erosion. Ch. 5 in: W.J. Elliot, I.S. Miller and L. Audin (eds.). *Cumulative Watershed Effects of Fuel Management in the Western United States*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RMRS-GTR-231. Fort Collins, CO.
- Running, S.W. 2006. Is global warming causing more, larger wildfires? *Science* 313:927.
- Sackett, S.S., S.M. Hasse, and M.G. Harrington. 1996. Lessons learned from fire use for restoring Southwestern ponderosa pine ecosystems. In: W.W. Covington, and M.R. Wagner (Eds.). *Conference on Adaptive Ecosystem Restoration and Management: Restoration of Cordilleran Conifer Landscapes of Northern America*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RM-GTR-278. Fort Collins, CO.
- Sandberg, D.V., R.D. Ottmar, and G.H. Cushon. 2001. Characterizing fuels in the 21st century. *International Journal of Wildland Fire* 10:381-387.
- Savage, M. P.M. Brown, and J. Feddema. 1996. The role of climate in a pine forest regeneration pulse in the southwestern United States. *Ecoscience* 3:310-318.

Appendix E. Comment Letters Received on the DEIS

- Scott, J.H. 1998. *Fuels Reduction in Residential and Scenic Forests: A Comparison of Three Treatments in a Western Montana Ponderosa Pine Stand*. USDA For. Serv. Rocky Mtn. Res. Sta. Res. Paper RMRS-RP-5. Fort Collins, CO.
- Scott, J.H., and E.D. Reinhardt. 2001. *Assessing Crown Fire Potential by Linking Models of Surface and Crown Fire Behavior*. USDA For. Serv. Rocky Mtn. Res. Sta. Res. Pap. RMRS-RP-29. Fort Collins, CO.
- Seager, R., M. Ting, Y. Kushnir, J. Lu, G. Vecchi, H. Huang, N. Harnik, A. Leetmaa, N. Lau, C. Li, J. Velez and N. Naik. 2007. Model projections of an imminent transition to a more arid climate in southwestern North America. *Science* 316:1181-1184.
- Shinneman D. J. and W.L. Baker. 1997. Nonequilibrium dynamics between catastrophic disturbances and old-growth forests in ponderosa pine landscapes of the Black Hills. *Conservation Biology* 11:1276-1288.
- Solvesky, B.G. 2007. *Roosts of Allen's Lappet-Browed Bat (Idionycteris phyllotis) in Northern Arizona*. M.S. Thesis. Northern Arizona University: Flagstaff. 83 pp.
- Spies, T.A. 2004. Ecological concepts and diversity of old-growth forests. *Journal of Forestry* 102: 14-20.
- Trombulak, S.C. and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Conservation Biology* 14:18-30.
- USDA Forest Service. 2007a. Forest Inventory and Analysis National Program—Forest Inventory Data Online (FIDO). <http://www.fia.fs.fed.us/tools-data/>
- _____. 2007b. *Implementation Guide, Region 3, Northern Goshawk Standards and Guidelines*. February 23. 22 pp.
- _____. 2006. *Final Supplement to the Final Environmental Impact Statement for Amendment of Forest Plans in Arizona and New Mexico*. Southwestern Region: Albuquerque, NM.
- _____. 1999. Forest Inventory and Analysis National Program—Forest Inventory Data Online (FIDO). <http://www.fia.fs.fed.us/tools-data/>
- _____. 1996a. *Final Environmental Impact Statement for Amendments to Forest Plans*. Southwestern Region: Albuquerque, NM.
- _____. 1996b. *Record of Decision on Amendments to Forest Plans*. Southwestern Region: Albuquerque, NM.

Appendix E. Comment Letters Received on the DEIS

- USDI Fish and Wildlife Service. 2012. *Biological Opinion on the Continued Implementation of the Land and Resource Management Plan for the Apache-Sitgreaves NFs of the Southwestern Region, U.S.D.A. Forest Service*. Region 2: Albuquerque, NM. April 30. 228 pp.
- _____. 1995. *Recovery Plan for the Mexican Spotted Owl*. Region 2: Albuquerque, NM. December. 348 pp.
- van Mantgem, P.J., N.L. Stephenson, et al. 2009. Widespread increase of tree mortality rates in the western United States. *Science* 323: 521-524.
- Van Wagner, C.E. 1977. Conditions for the start and spread of crown fire. *Canadian Journal of Forest Research* 7:23-24.
- Wallin, K.F., T.E. Kolb, K.R. Skov, and M.R. Wagner. 2003. Effects of crown scorch on ponderosa pine resistance to bark beetles in northern Arizona. *Environmental Entomology* 32:652-661.
- Westerling, A.L., H.G. Hidalgo, D.R. Cayan, and T.W. Swetnam. 2006. Warming and earlier spring increase western U.S. forest wildfire activity. *Science* 313:940-43.
- Williams, A.P., C.D. Allen, C.I. Millar, T.W. Swetnam, J. Michaelsen, C.J. Still and S.W. Leavitt. 2010. Forest responses to increasing aridity and warmth in the southwestern United States. *PNAS* 107: 21289-94.



United States Department of the Interior

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IN REPLY REFER TO:
ER# 12/700

Electronically Filed

14 November 2012

Sandy Hurlocker, District Ranger
Santa Fe National Forest
Española Ranger District
1710 N. Riverside Drive
Española, NM 87532

Subject: Review of Draft Environmental Impact Statement (DEIS) for the Rim Lakes Forest Restoration Project (Project) on the Black Mesa Ranger District of the Apache-Sitgreaves National Forests, Coconino County, Arizona.

Dear Ms. Hurlocker:

The Department of the Interior has received and reviewed the subject document and has the following comments to offer.

General Comments

Migratory Birds

174

The DEIS should provide in detail specifically when during the calendar year various aspects of the project will occur (burning, thinning, clearing, piling). It currently does not. However, the DEIS mentions (Table 73) that at least some burning (broadcast burning) as well as thinning and snag removal will occur during the nesting seasons of the local birds, and “unintentional take of nestlings is possible” for 8 species addressed in the table.

Therefore, we can presume there will be incidental take of nestlings for most of the estimated 130 species of birds that breed within the Project footprint. Of those, only two (less than 2 percent) are addressed: Mexican spotted owl and northern goshawk.

If burning, thinning, or clearing activities must occur during the nesting season (primarily April through August for this geographic area and altitude), the DEIS should explain why these activities must occur during this time period, and provide reasons why these activities cannot be

175

Appendix E. Comment Letters Received on the DEIS

limited to occurring outside the nesting season (September through March). We recommend the DEIS document how the USFS plans to minimize these impacts and avoid violations of the Migratory Bird Treaty Act.

The DEIS also does not address several species listed as Birds of Conservation Concern (BCC) (USFWS 2008) relevant to the area of the Project. The relevant Bird Conservation Region (BCR) for the project is BCR 34 (Sierra Madre Occidental); species listed as of concern for this BCR that are not addressed in the DEIS, but likely breed within the Project area, include gray vireo, pinon jay, phainopepla, black-throated gray warbler, and canyon towhee.

176

Therefore, we recommend the DEIS explain how impacts to these species will be minimized. Also, the footnote to Table 73 cites the 2002 BCC list, not the current 2008 list, and it cites BCR 16 (Southern Rockies/Colorado Plateau) rather than BCR 34.

177

We appreciate the opportunity to review the proposed Rim Lakes Forest Restoration Project and DEIS. If you have any questions or need additional information, please contact Greg Hughes, Chief, Division of Migratory Birds, Albuquerque, New Mexico, at 505-248-6622.

Sincerely,

A handwritten signature in black ink, reading "Patricia Sanderson Port". The signature is fluid and cursive, with the first name "Patricia" being the most prominent.

Patricia Sanderson Port
Regional Environmental Officer

Cc:
Director, OEPC
Loretta Sutton, OEPC staff contact
Director, USGS